iMM Installation Manual

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1. Get started

- Commands are given in purple, e.g.: sudo reboot
- Paths and links are given in red: imm/Pictures
- Notices are given in orange: **No characters display when writing a password in terminal**
- Tips and tricks are given in green: If you do not want to run configuration via iMM CC at every server/client separately; you can open iMM CC on any PC connected to local network…
- Commands are in *italic*

Explanatory notes:

Folder / Directory		space at disc where files (pictures, films, videos) are saved. Directory may contain further subdirectories.
iMM application	applic ation	sw application on video zone
Audio zone	AZ	zone equipped with music player (Squeezebox or other) and speakers
EPG		electronic program wizard
Ethernet	LAN	wire (cable) network
Floorplan	FP	Floor plan of house or individual rooms
Full HD		High image resolution (1920x1080px); detail and sharp image. Can be achieved from BlueRay or TV program providers in HD quality.
DB	DB	see Streamer
Gyro control	GO	wireless mouse reacting to hand movement; serves to control the menu on the video zone
iDM		iNELS Designer and Manager – sw environment for iNELS configuration
iMM Client		Video zones
iMM Control Center	iMM CC	iMM configuration administrator available via web interface
IP camera		camera connected to system which transfer the image on Ethernet or Wifi
Linux		Operational system VZ on which iMM application runs
LT	LT	left button of Gyro control
NFS	NFS	(Network File Systems) protocol for sharing files and folders
Playlist		list of songs, videos or pictures
PT	PT	right button of Gyro control
Slideshow	SS	automatic presentation of pictures
Streamer		satellite receiver that streams TV image top video zones
Stream		is link (file) to place (on internet, in network, IP player or Streamer) which provides image or sound
Storage		a place on iMM server hard disk drive where files which all iMM system users share are centrally saved
Video zone	VZ	zone equipped with iMM Client and TV (or another monitor).
WiFi		wireless network

Important application configuration commands in Linux (are entered in terminal):

CTRL+ALT+T – calling up terminal

Ifconfig - finding IP address of station/server, similar to IPCONFIG in Windows

mount – command for connection of certain device (CD-ROM, network drive, etc.)

umount - command for disconnection of certain device

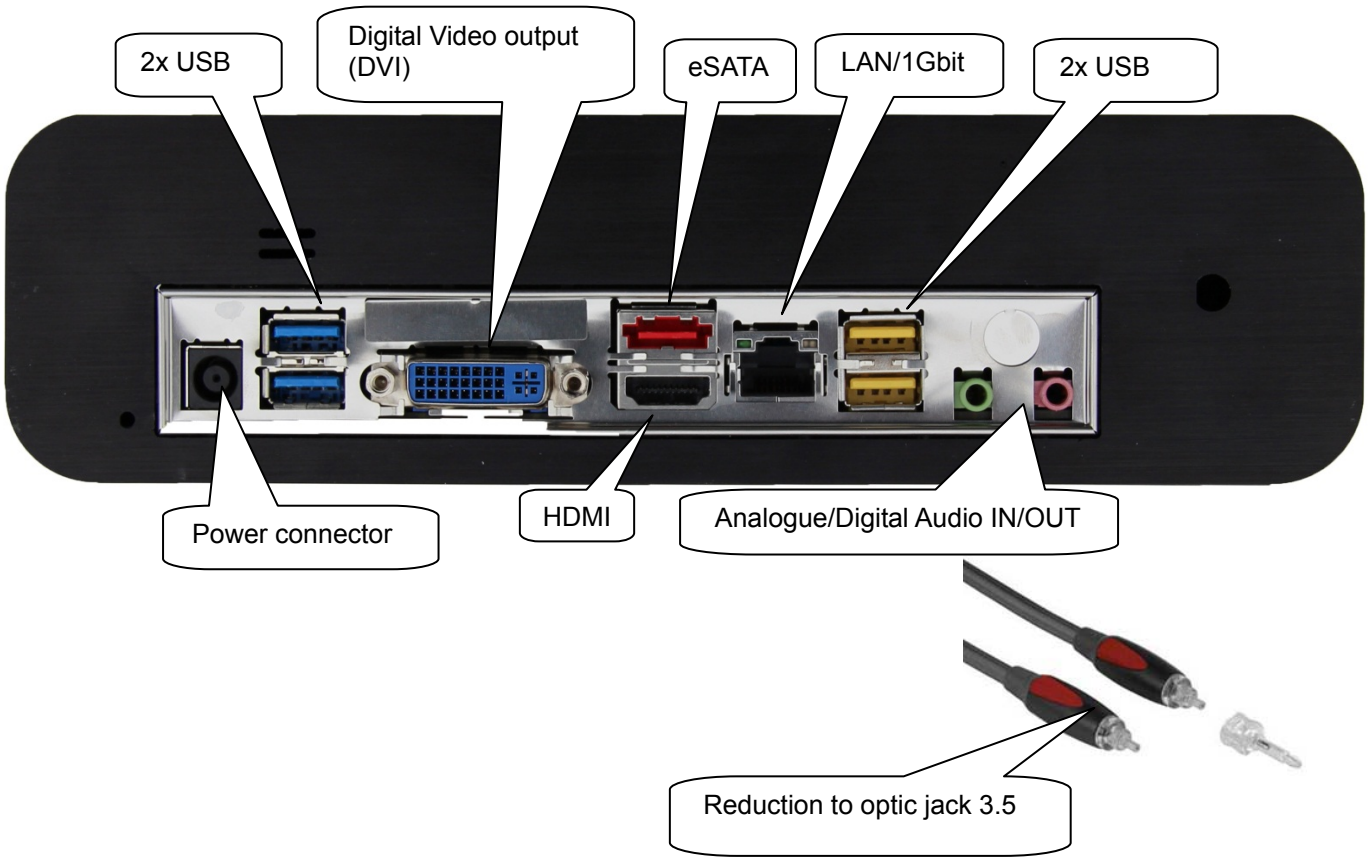
sudo /etc/init.d/imm-webadmin restart – command for restarting webserver

1.1. Putting VZ in operation

a) Once you unpack VZ, let the device stabilize at room temperature.

b) Connect the cabling:

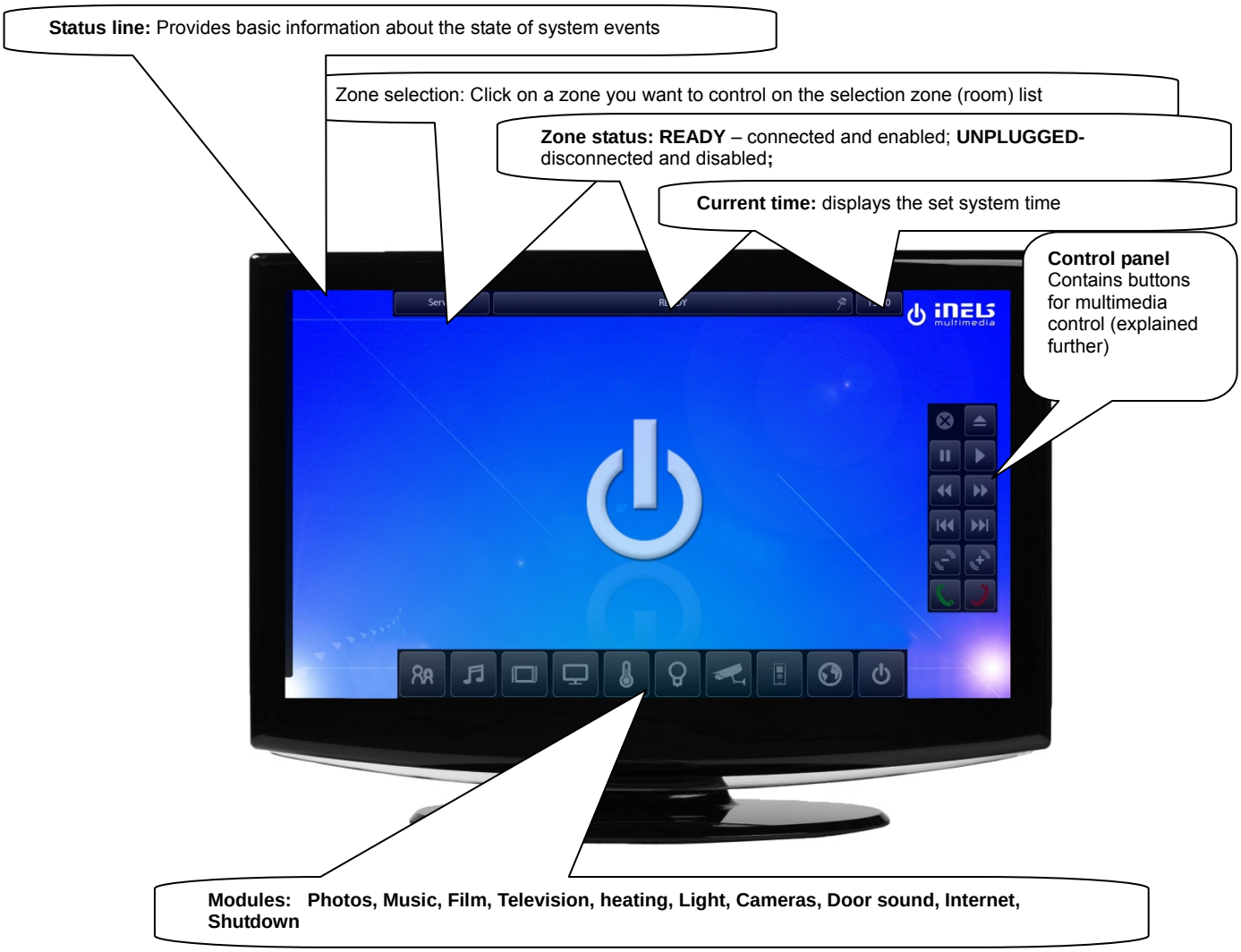
- 230V/19V adapter.
- LAN (iMM cannot be triggered without the presence of active network connection).
- Mouse and keyboard (connection via USB).
- Display device: TV or PC monitor by means of HDMI, DVI or DisplayPort.
- Audio output: combined (analogue + optical), HDMI.



Video zone

c) Switch on by pressing the On/Off button ⏻ on the front side of VZ.

d) When the system starts up, iMM application starts automatically (blue screen),.


Status line: Provides basic information about the state of system events
Zone selection: Click on a zone you want to control on the selection zone (room) list
Zone status: READY – connected and enabled; UNPLUGGED- disconnected and disabled;
Current time: displays the set system time
Control panel Contains buttons for multimedia control (explained further)
Modules: Photos, Music, Film, Television, heating, Light, Cameras, Door sound, Internet, Shutdown

1.2. Basic setting

Setting in this chapter need not be carried out; it serves for potential problem solution and general assistance in the Linux system orientation. Majority of these settings is done already in the production but one should get familiarized with them and go back to them if a problem occurs.

- Terminate Application by holding down the left mouse button (for longer than 5 seconds) on icon .
- You are on the Linux working area now.
- The application can be restarted by icon

on the desktop.

1.2.1. Change of password

a) Enter sudo passwd in terminal, and confirm by Enter.

b) You will be asked to enter the original password (default is “imm123“), and confirm by Enter.

c) Then enter a new password, confirm by Enter; repeat the new password and confirm by Enter.

d) Close the terminal with the cross in the left upper corner.

No characters display when writing a password in terminal.

1.2.2. Resolution adaptation:

The application can be run on LCD, plasma TV or PC monitor with lower resolution than Full_HD. If the resolution does not seem to be correct Application has to be re-installed. During the installation, Application will recognize correct resolution of the display device, and will adapt to it. The TV image should be adjusted to „Adapt“. First of all, the client part has to be reinstalled. If the version is Server/Client, also the server part will have to be reinstalled.

1.2.3. Installation of new version

a) Download the package with new Application version to VZ desktop.

b) Click on the downloaded package with the right mouse button, and selection the “unzip here” option.

c) A new folder named “iMM" will appear on the desktop.

d) Open the folder and by double click select the “install.sh.” file.

e) Select “Open in terminal” option in the dialogue window.

f) A window with terminal will open, requesting a password. As default the password is “imm123”. If you changed the password, enter the password you chose and confirm by Enter.

g) Proceed by the installation instructions in the terminal.

h) If the terminal requests installation of additional packages, confirm the “Y” question and press Enter.

i) During the server part installation unpack the package on the desktop, same as with the client version, and install it in the same manner. (file: “install 12.04.sh)

j) When the installation is completed, terminal closes automatically, and then restarts given VZ.

1.2.4. Restart and turning the system off

Pressing the „F9“ key will display the upper and lower system bar. Click on icon in the top right corner. When the menu unpacks, select the desired option: Switch off.

Pressing the button with symbol on the front VZ panel calls up a menu with options for switching off and restart of VZ.

1.2.5. Setting static VZ IP address

All VZ are preset to get automatically IP address via DHCP. For stations it is however recommended to set fixed IP address of adequate range of home network.

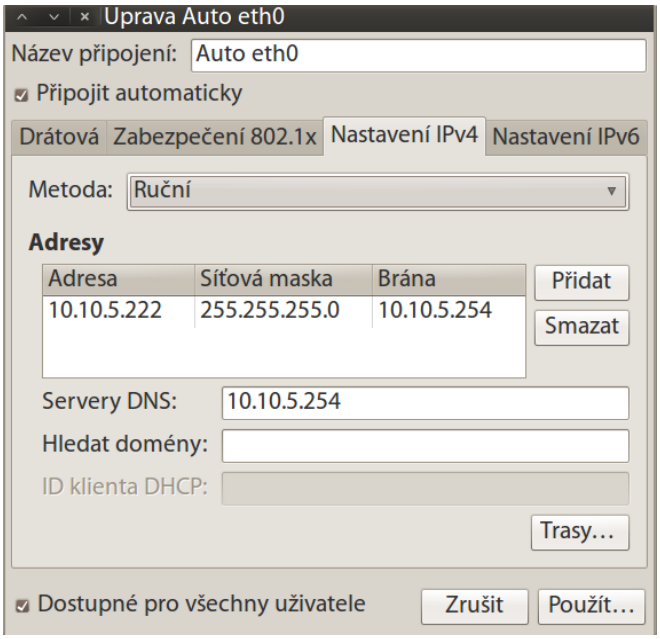
a) Call up the system bar using the “F9” key.

b) By the left mouse button click on the network icon in the upper bar.

c) Select the option “Adjust connection”.

d) A window opens in which select the network named "Wire connection 1", and click on the “Adapt” option.

e) In the next window select the bookmark “Setting IPv4”, and in the drop down menu select “Manual”.



f) A table activates where the "Add" option activates the line for address definition.

- enter IP address of relevant home network range in the “Address” column
- in the “network mask” column enter the network mask
- type the address of your router in the “Gate” column, and confirm by Enter

g) Type again your router's address in the “DNS servers” line.

h) Confirm by “Use” key, enter the password and close all windows.

i) Press F9, click on the network connection icon by the left mouse button, and select “Disconnect”.

j) After disconnection click on the network connection icon in the upper system bar and, instead of “Disconnect”, select “Wire connection 1".

Thus the connection restarts.

1.2.6. Setting the font (preset within the factory settings)

a) Call up the system bar using the “F9” key.

- Applications → System tools → Defaults → Advanced settings

b) Select Motive → Window motive “Dust” (tick only).

In the “Fonts“ bookmark set the fonts as follows:

- Default font: Myriad Pro 16
- Document font: Myriad Pro 16
- Monospace fonf: Myriad Pro 16
- Window title font: Myriad Pro 16
- “Close” after completion.

1.2.7. Update administration

The system searches own software update resources by means on the internet. To this purpose there is update administrator which, when update is found, opens itself and alerts users on the possibility of downloading new updates. It is recommended to maintain the system updated.

a) You can activate update administrator by yourselves and thus check the software update status. By calling up system bar “F9”select Applications → System tools → Administration → Update administrator.

b) Click on “Install update” in the “Update administrator” window.

c) The system asks you to type your password; confirm by “Verify”.

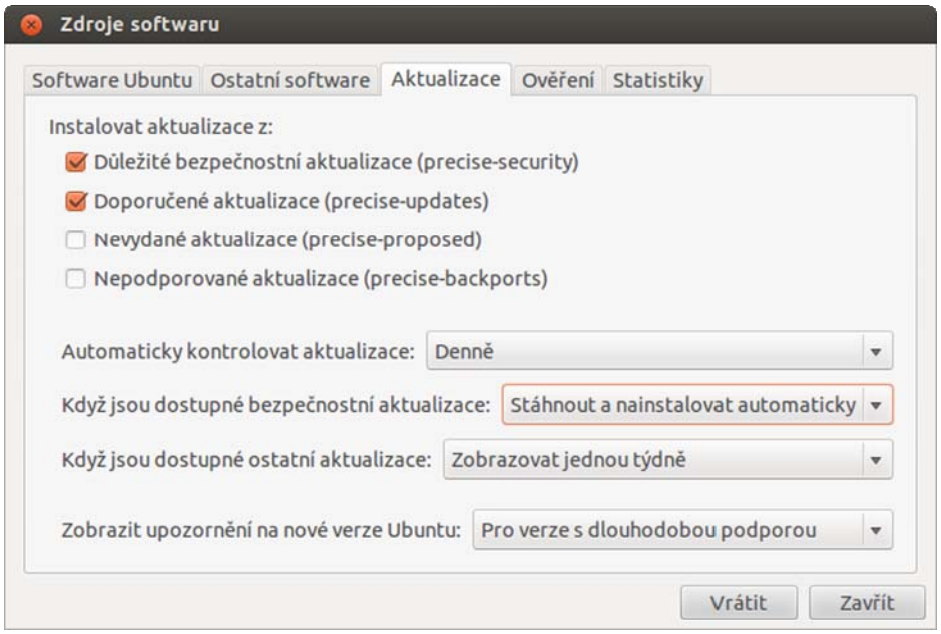
d) The system will inform you on the course of download and installation of new updates.

e) After the completion the wizard closes automatically, and the system should be restarted (see Chapter 1.2.4.).

Automatic update setting

You can set download and installation of update automatically without confirmation and any other interventions of user...

1. Upload Software centre, select Adapt Software resources from the menu… open the tool for update and software resources setting and go to the Update card.
2. In the Ubunt update select which updates will be installed (for automatic update we recommend to enable only Important safety updates).
3. In the Automatic update part then select how often the system will check the availability of updates, and for direct installation of updates after the download tick the option Install security updates without confirmation.



2. Network File System ("NFS" hereinafter) configuration

NFS has to be set in case you use multiple VZ. If you use single VZ as iMM server, NFS need not be configured.

2.1. NFS configuration to VZ iMM Server

The following setting must take place physically on iMM Server.

a) Press the "F9" key to display the system bar, and open the web browser (default Firefox).

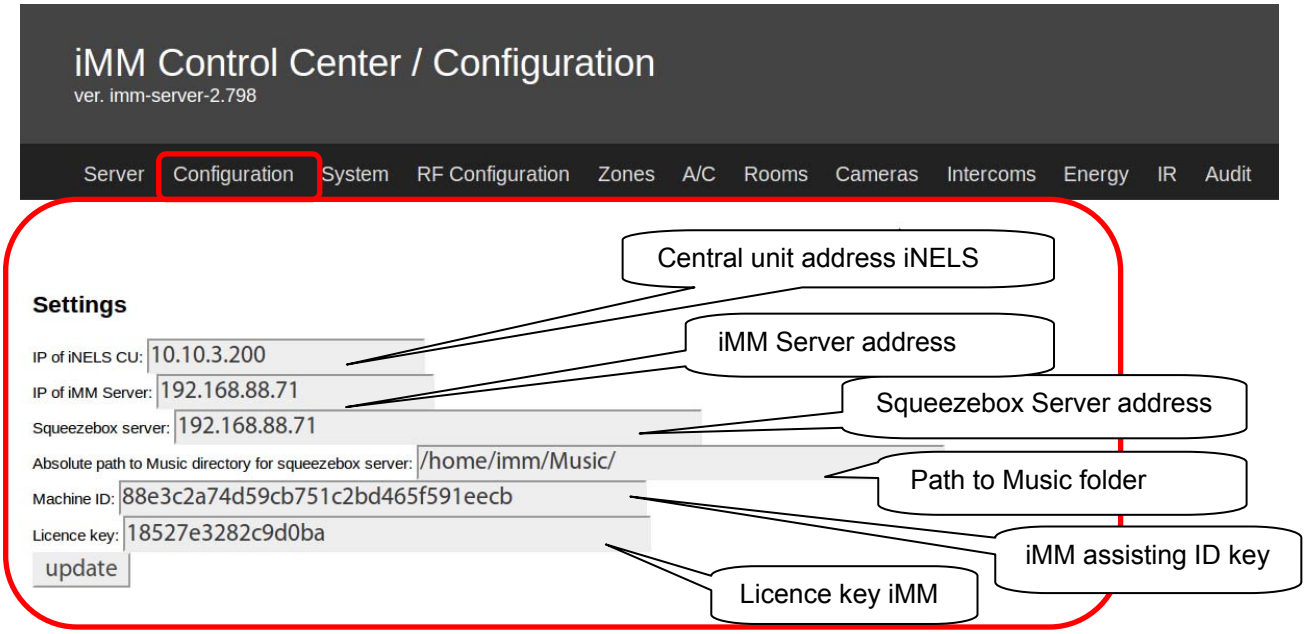
b) Type address http://localhost:8080 to open iMM CC.

c) Here, in the "Configuration" bookmark, set the CU unit IP address and the IP address of server (of this station), of Sqeezebox server, path in Music folder in relevant lines.

d) Confirm the change by pressing "update" and close the browser.

e) Enter the command "sudo gedit /etc/exports" in the terminal.

f) The terminal will request your password and file export opens in the text editor after confirming by Enter.



b) Add the below line at the end of the line:

/home/imm „IP serveru“**/**“maska sítě“**(rw,sync,no_subtree_check)** *(*in the quotation marks of the actual address)*

example: ***/home/imm 10.10.3.0/255.255.255.0(rw,sync,no_subtree_check)***

*for **server** there is ALWAYS zero at the end of the IP address!*

c) Save the changes in the file and close it.

d) Restart VZ.

Note:

The address of the Squeezebox server is the IP address of the device where the server for music playback is installed.

The path to the Music folder is a precisely pre-defined path to the folder in the system, and must always have the following format: „/home/imm/Music“.

The secondary and licence key is generated in the production, and must not be deleted; otherwise imm will not work.

Shared folders in Storage are located here:

/home/imm/Pictures : for keeping photographs and pictures

/home/imm/Music : for saving audio files

/home/imm/Video : for saving video files

/home/imm/Television: here links to TV streams are saved, **see chapter** 5 „Streamer configuration“.

/home/imm/Cameras : here configuration files of cameras connected to iMM system are stored

Read more about supported formats and content of folders in **chapter 8.3. Supported formats**

In the Czech Linux localisation you need to copy in folders with English name, i.e. Pictures (NOT "Obrázky"), Music (NOT "Hudba"), …

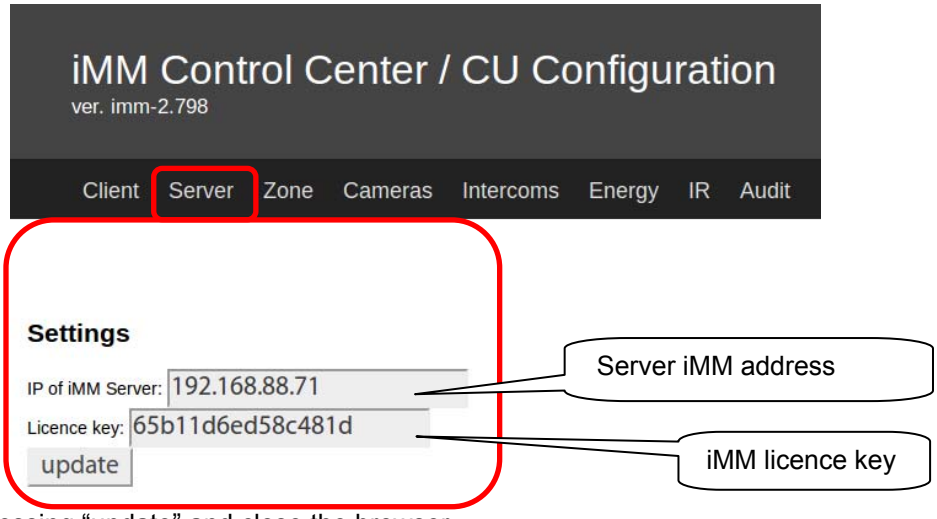
2.2. NFS configuration on iMM Client

You need to do this part physically, separately for each iMM Client.

a) Press the "F9" key to display the system bar, and open the Firefox web browser.

b) Type the address http://localhost:8090 to open iMM CC.

c) Here, in the "Configuration" bookmark, type the iMM Server's IP address in the "Address of IMM server"" line.



d) Confirm by pressing "update" and close the browser.

e) Enter the command "sudo gedit /etc/fstab" in the terminal and confirm by Enter.

f) You will be asked to type your password; which you will confirm by Enter.

g) The fikle "fstab" will upload in the text editor. Add the below line to the end of the file:

ip_imm_serveru:/home/imm /mnt/nfs nfsver=3,bg, _netdev, nolock, hard, rw, user 0 0

h) Save the file by pressing CTRL+S and terminate the application by CTRL+X.

i) Now you need to restart iMM Client; this will map automatically the needed folders from the server.

j) When the system starts up, terminate the iMM Application, and in folder "Storage" delete the following folders (Video, Music, Television, Cameras, Pictures). Then open the terminal and enter the following commands:

sudo ln -s /mnt/nfs/Music /home/imm/Music (command for connection to Music storage)

sudo ln -s /mnt/nfs/Video /home/imm/Video (command for connection to Video storage)

sudo ln -s /mnt/nfs/Television /home/imm/Television (command for connection to Television storage)

sudo ln -s /mnt/nfs/Cameras /home/imm/Cameras (command for connection to Cameras storage)

sudo ln -s /mnt/nfs/Pictures /home/imm/Pictures (command for connection to Pictures storage)

k) One all the above commands are entered, end the terminal and restart the iMM application by opening the icon on the desktop.

2.3. Connection of external hard disk drives

Server

fstab setting

In terminal: “sudo gedit /etc/fstab “

Add a new line to the end:

“UUID=F474B7AA74B76DCC /media/**My\040Passport** ntfs-3g defaults,nosuid,nodev,nobootwait,locale=cs_CZ.UTF-8 0 0“

Hard disk drive identifier is in red; in **bold** is the name of hard disk drive; you can find it out by the following command: “sudo blkid“ which is typed behind UUID=XXXXXXXXXXXXXXX in a line which ends with ntfs. The HDD name can be found behind the legend.

LABEL=**xxxxxxx**

Example: In terminal: “sudo blkid“

the following appears:

/dev/sda1: UUID="453a8d4f-d4fb-4c4e-8de5-ef7666e689d1" TYPE="ext4" - (iMM client's hard disk drive)

/dev/sda5: UUID="0a49bd69-20a7-490c-97db-6781bd794837" TYPE="swap - (iMM client's mechanics)

/dev/sdb1: LABEL="My Passport" UUID="F474B7AA74B76DCC" TYPE="ntfs" -(External hard disk drive)

Note: Instead of the space in the name of the hard disk drive (if there is any) you have to add „\040„

Setting exports

In terminal: “sudo gedit /etc/exports“

Add the following to the end of the text on a new line:

“/media/My\040Passport 192.168.88.0/255.255.255.0(rw,fsid=0,no_root_squash,no_subtree_check,sync)“

The range of the network differs by the network iMM server is connected to … (192.168.88.0). Type zero to end of this range.

Client

fstab setting

In terminal: “sudo gedit /etc/fstab “

Add a new line to the end:

„ IP serveru“:/media/My\040Passport /media/My\040Passport / nfs nfsvers=3,rw,hard,intr 0 0

Note: “My\040Passport” is the name of device of concrete hard drive disk which has to be precisely defined in the client's fstab (same as in fstab on the server).

2.4. Sharing external storage – external HDD

Server settings:

a) Set fstab in the same manner like fstab settings of Server 2.3.

b) Set Export in the same manner like the Server 2.3 Export settings.

c) Restart server.

d) Now delete system folders via terminal by entering the below commands:

```
rm -r /home/imm/Video 2>/dev/null
rm -r /home/imm/Pictures 2>/dev/null
rm -r /home/imm/Television 2>/dev/null
rm -r /home/imm/Music 2>/dev/null
rm -r /home/imm/Cameras 2>/dev/null
```

e) In the terminal, go to Create “iMM" folder on HDD.

Notice!: The name of the hard disk "iMM HDD“ will always differ depending on how you name your concrete HDD.

Ex.: If the name of your HDD is, for instance: “Verbatim“ the names in the below links change to:

```
(mkdir /media/Verbatim/iMM)
mkdir /media/iMM-HDD/iMM
mkdir /media/iMM-HDD/iMM/Video 2>/dev/null
mkdir /media/iMM-HDD/iMM/Video/Recording 2>/dev/null
mkdir /media/iMM-HDD/iMM/Video/Cameras 2>/dev/null
mkdir -m 0777 /media/iMM-HDD/iMM/Pictures 2>/dev/null
mkdir /media/iMM-HDD/iMM/Television 2>/dev/null
mkdir /media/iMM-HDD/iMM/Music 2>/dev/null
mkdir /media/iMM-HDD/iMM/Cameras 2>/dev/null
```

f) Then create the below system folders in the terminal:

```
ln -s /media/iMM-HDD/iMM/Music/ Music
ln -s /media/iMM-HDD/iMM/Video/ Video
ln -s /media/iMM-HDD/iMM/Pictures/ Pictures
ln -s /media/iMM-HDD/iMM/Television/ Television
ln -s /media/iMM-HDD/iMM/Music/ Music
ln -s /media/iMM-HDD/iMM/Cameras/ Cameras
```

g) Then you can already upload your data!!!

Client

a) Set fstab in the same manner like fstab Client 2.3. settings.

b) Then create the below symbolic links in the terminal:

```
ln -s /media/iMM-HDD/iMM/Music/ Music
ln -s /media/iMM-HDD/iMM/Video/ Video
ln -s /media/iMM-HDD/iMM/Pictures/ Pictures
ln -s /media/iMM-HDD/iMM/Television/ Television
```

ln -s /media/iMM-HDD/iMM/Music/ Music

ln -s /media/iMM-HDD/iMM/Cameras/ Cameras

Note: For visilbity of HDD in folders type the following command in the terminal:

for path in Music Video Pictures; do [! -L ~/"$path/#EXTERNAL"] && ln -s /media ~/"$path/#EXTERNAL"; done

2.5. Setting shared storage NAS Synology

Connect to NAS web interface by typing the IP address of the NAS device in the web browser.

Enable NFS service:

Open – Control panel > Win/Mac/NFS > NFS service > Win/Mac/NFS > Enable NFS and click on Use

Enable SSH service:

Open – Control panel > Terminal > Enable SSH Service

Open "Putty" tool for remote control on your PC, type in NAS IP address you want to share. Log in as „root" by typing: root and password. You are remotely connected to NAS now.

Then type:

mkdir /volume1/iMM

mkdir /volume1/iMM/Video

mkdir /volume1/iMM/Video/Recording

mkdir /volume1/iMM/Video/Cameras

mkdir /volume1/iMM/Pictures

mkdir /volume1/iMM/Television

mkdir /volume1/iMM/Music

mkdir /volume1/iMM/Cameras

whilst volume 1 is a work folder (disk) intended for sharing.

You can find out The name of the folder by command **cat /etc/fstab** (cat space /etc/fstab). If the name differs, you have to change the names in the list of commands.

After creation of shared folders change authorisation to these folders by command "**chmod -R 777 /volume1/iMM/"**

Next command will export shared folders for access from other devices "**vi /etc/exports"**

Press enter and add the following line to the last line (if there is no last line, add it on the first one):

/volume1/iMM 192.168.88.0/255.255.255.0(rw,sync,no_subtree_check,no_root_squash)

You will do that by pressing letter "i" which enables typing, and copy the line, or write it manually; after typing press Esc and write letters "wq".

Bear in mind that 192.168.88.0 is IP of given NAS server but with zero at the end.

In case of any doubts use the below manual: http://www.nti.tul.cz/~satrapa/docs/vim/

Setting of NAS sharing to client

Type the following command in terminal: **"sudo nano /etc/fstab"**

A window opens, at the end of which type the below line:

192.168.88.200:/volume1/iMM /mnt/nas nfs nfsvers=3, bg, _netdev, nolock, hard, rw, user 0 0

There is NAS device IP at the beginning of the line. (192.168.88.200)

Open the terminal and create symbolic links:

ln -s /mnt/nas/Music/ Music

ln -s /mnt/nas/Video/ Video

ln -s /mnt/nas/Pictures/ Pictures

ln -s /mnt/nas/Television/ Television

ln -s /mnt/nas/Music/ Music

ln -s /mnt/nas/Cameras/ Cameras

Then create a symbolic line for sharing by putting the following command in the terminal:

for path in Music Video Pictures do [! -L ~/"$path/#EXTERNAL"] && ln -s /media ~/"$path/#EXTERNAL" done

2.6. Saving files in Storage

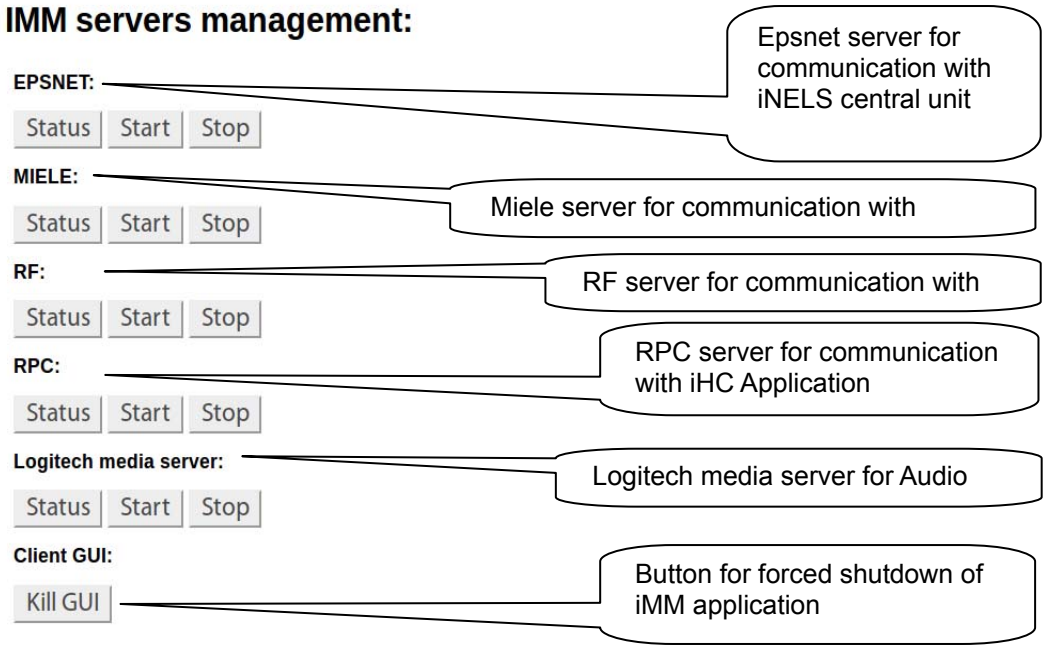
An icon of “Storage” folder with the below directories is located on the desktop: Music, Video, Pictures, Television, Cameras. These folders are accessible from any VZ, and you can copy data inside (from USB, CD.,,,).

3. Configuration in iMM Control Center

IMM Control Center (the “iMM CC” hereinafter) is a web interface serving for setting iMM clients and iMM servers. iMM CC is activated upon entering the address http://localhost:8080 in your internet browser. If iMM Control Centre does not open, type the following in Terminal: sudo /etc/init.d/imm-web admin restart.

3.1. Setting iMM CC on iMM server

3.1.1.Bookmark Server

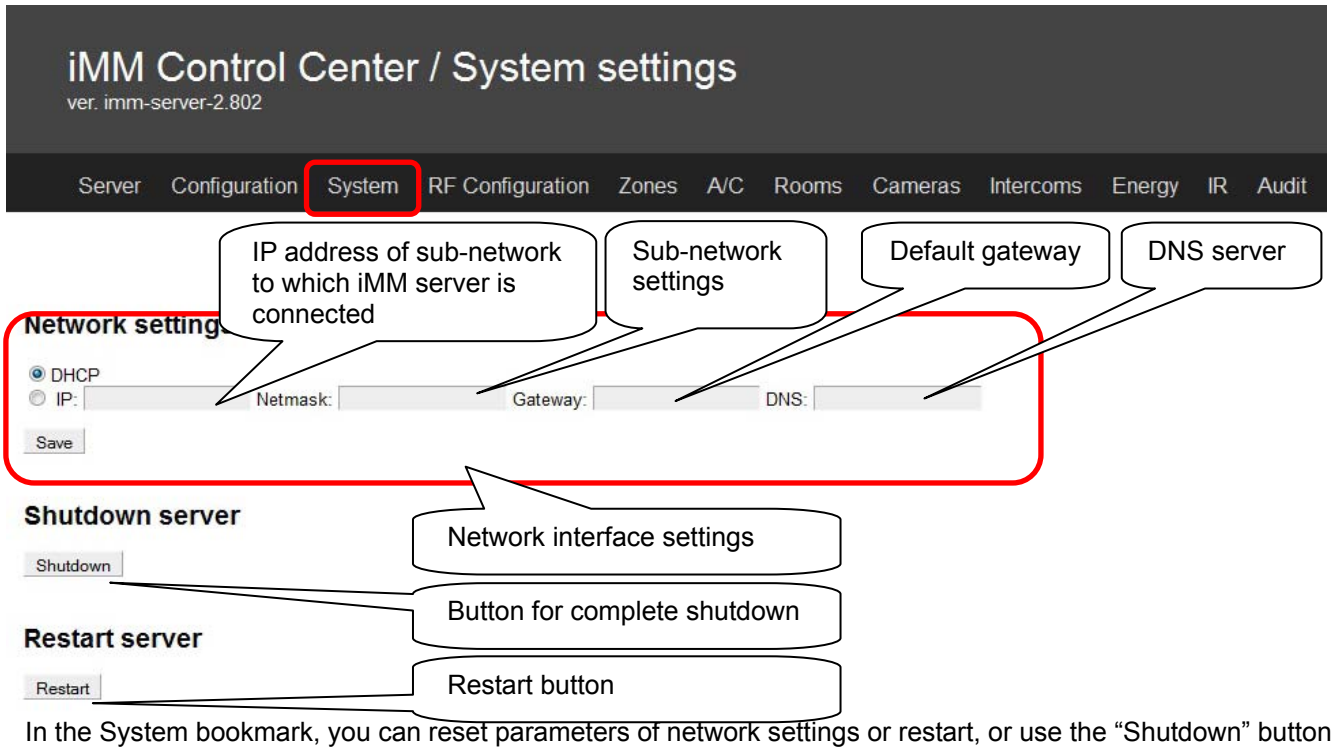


This bookmark contains control to virtual servers necessary for communication with devices of third parties. Within diagnostics, the state of individual virtual servers can be found out (button "**Status**"), suspend their run (button "**Stop**"), or activate them (button "**Start**"). If servers are installed (see chapter 1.2.3), they start automatically when iMM starts.

3.1.2.Bookmark CU Configuration

iMM Control Center / Configuration
ver. imm-server-2.798
Server
Configuration
System
RF Configuration
Zones
A/C
Rooms
Cameras
Intercoms
Energy
IR
Audit
Address of iNELS central unit
Server iMM address
Squeezebox server address
Path toMusic folder
Assisting ID key
Licence key
Settings
IP of iNELS CU: 10.10.3.200
IP of iMM Server: 192.168.88.71
Squeezebox server: 192.168.88.71
Absolute path to Music directory for squeezebox server: /home/imm/Music/
Machine ID: 88e3c2a74d59cb751c2bd465f591eecb
Licence key: 18527e3282c9d0ba
update
Upload or edit export.pub
numberFind file „export.pub“
Upload file „export.pub“
Upload:
Procházet...
Upload
UserBits R B 17112 UDINT PUB_INOUT
system_Voda_UP R B 4 .0 BOOL PUB_INOUT
system_Voda_DOWN R B 4 .1 BOOL PUB_INOUT
system_Voda_RESET R B 4 .2 BOOL PUB_INOUT
system_Voda_VALUE R B 5 UINT PUB_INOUT
system_Plyn_UP R B 7 .0 BOOL PUB_INOUT
system_Plyn_DOWN R B 7 .1 BOOL PUB_INOUT
system_Plyn_RESET R B 7 .2 BOOL PUB_INOUT
system_Plyn_VALUE R B 8 UINT PUB_INOUT
system_Elektrika_UP R B 10 .0 BOOL PUB_INOUT
system_Elektrika_DOWN R B 10 .1 BOOL PUB_INOUT
system_Elektrika_RESET R B 10 .2 BOOL PUB_INOUT
system_Elektrika_VALUE R B 11 UINT PUB_INOUT
system_TIM1_Voda_1sec__START R B 13 .0 bool PUB_INOUT
system_TIM1_Voda_1sec__STOP R B 13 .1 bool PUB_INOUT
system_TIM1_Voda_1sec__RESET R B 13 .2 bool PUB_INOUT
system_TIM1_Voda_1sec__VALUE R B 14 UINT PUB_INOUT
system_TIM2_Plyn_0_5_sec__START R B 27 .0 bool PUB_INOUT
system_TIM2_Plyn_0_5_sec__STOP R B 27 .1 bool PUB_INOUT
system_TIM2_Plyn_0_5_sec__RESET R B 27 .2 bool PUB_INOUT
system_TIM2_Plyn_0_5_sec__VALUE R B 28 UINT PUB_INOUT
update
Save changes performed in extract from file export.pub
Extract from file „export.pub“. There are units, events and variables from iNELS that are imported to iMM.

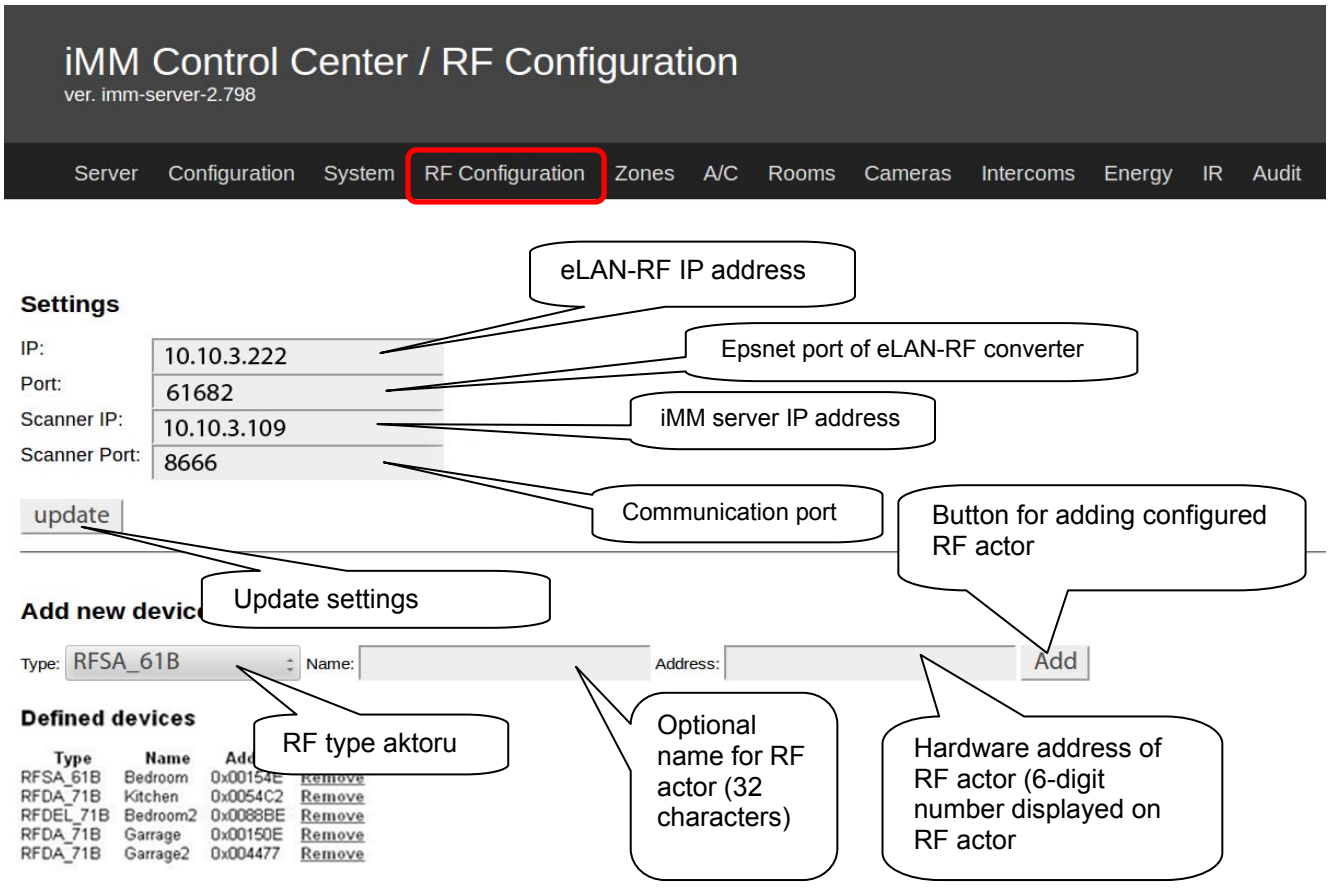
3.1.3.Bookmark System



In the System bookmark, you can reset parameters of network settings or restart, or use the “Shutdown” button to turn off the server completely. IP address is usually set to static to avoid its change in time.

3.1.4.Bookmark RF Configuration

eLAN-RF device is necessary for iMM communication with wireless RF electrical installation. RF elements are added on FP in the same manner as iNELS elements. Only the RF field under the list of elements has to be ticked.



1) Procedure for RF elements configuration

a. List of supported RF elements

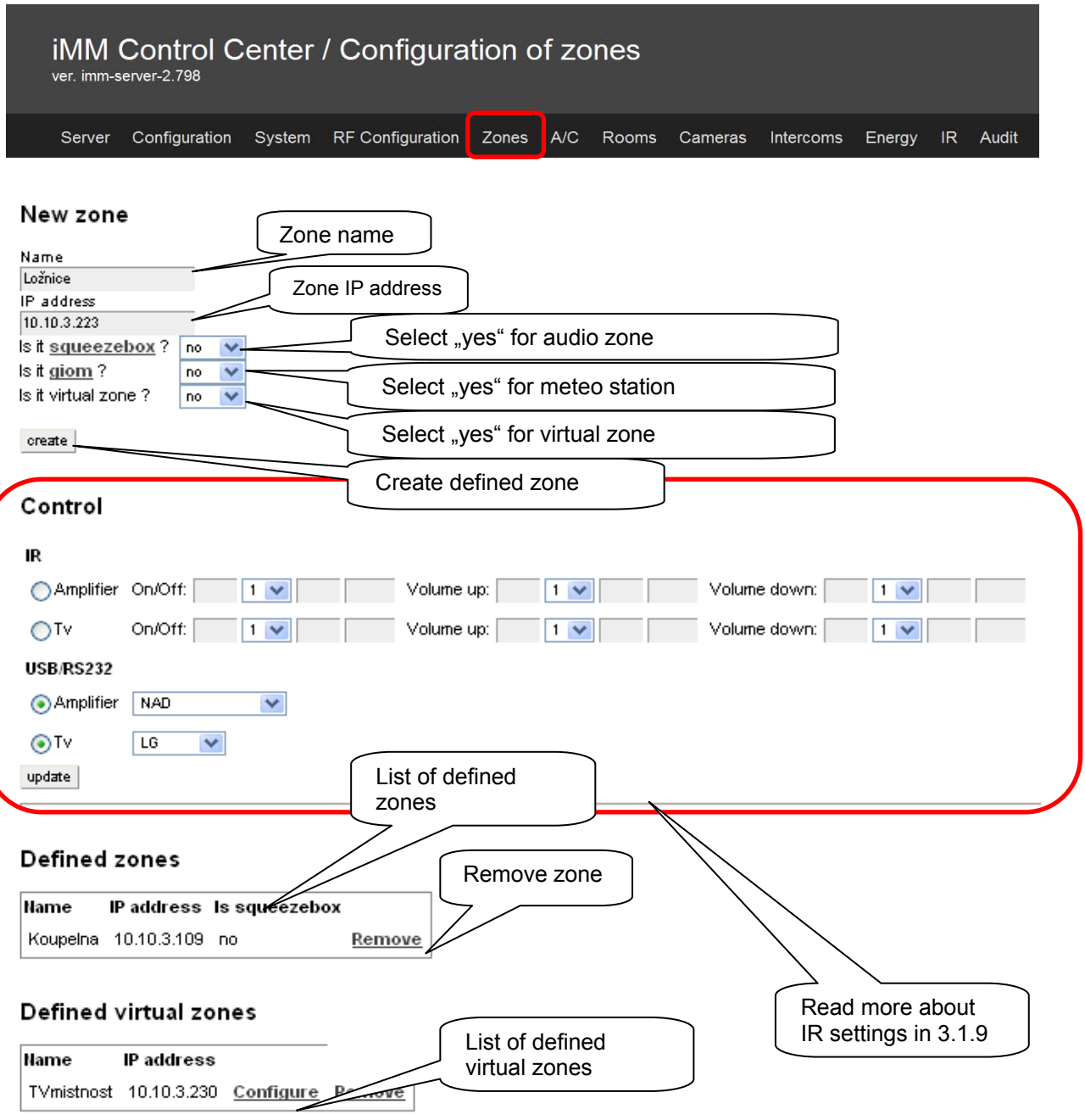
Element	Designation	Element	Designation
RFTC_10_G	Digital temperature controller	RFSA_61B	Switch actor; 6 functions (box)
RFJA_12B_24V_DC	Roller actor for 12-24 V DC drives	RFSA_62B	Switch actor; 2 channels, 6 functions (box)
RFJA_12B_230V	Roller actor for 230 V AC drives	RFSA_61M	Switch actor; 6 functions (DIN)
RFDA_71B	Dimmer actor; 7 functions	RFSA_66M	Switch actor; 6 channels, 2 functions (DIN)
RFDAC_71B	Analogue actor (flueorescent lamps, thermoheads)	RFSC_61	Switched outlet; 6 functions
RFDEL _71B	Dimmer actor (economic and LED bulbs)	RFSTI_11B	Switched temperature sensor
RFDS C_71	Dimmed outlet; 7 functions	RFSTI_11/G	Actor with temperature sensor
RFSA_11B	Switch actor; single-function (box)	RFTI_10B_IN	Temperature sensor with integrated sensor
RFSC_11	Switched outlet	RFTI_10B_OUT	Thermal sensor with connectors for connection of sensor

a. Select the type
b. Type the name which you choose
c. Type the address in format 0x“address“ (e.g. 0x0014AD)

2) Add the element by clicking to Add
3) Restart iMM server
4) Add the icon to FP but tick RF.

3.1.5.Bookmark Zones

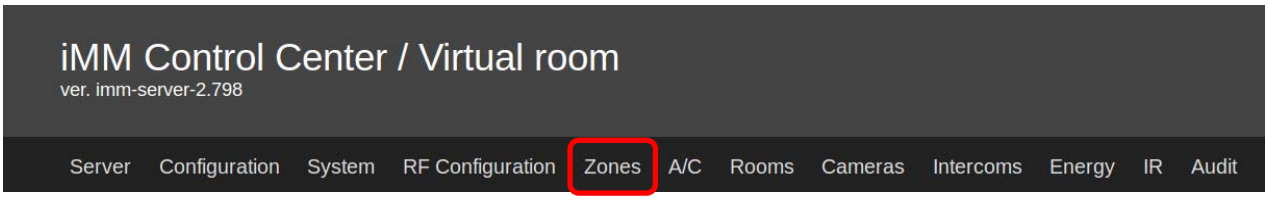
In this bookmark individual zones used in the iMM system are defined.

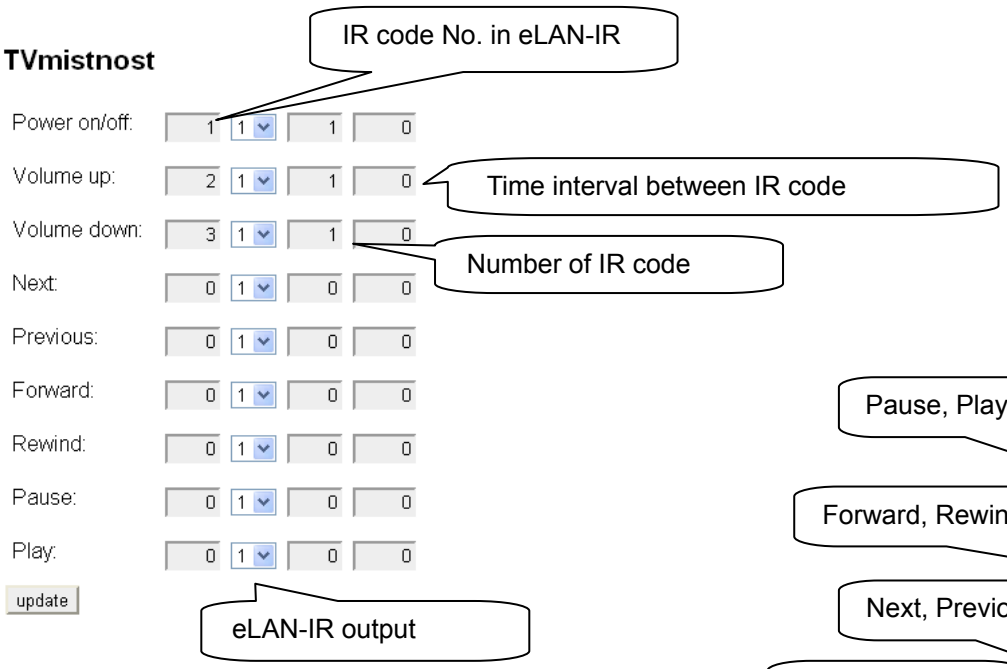


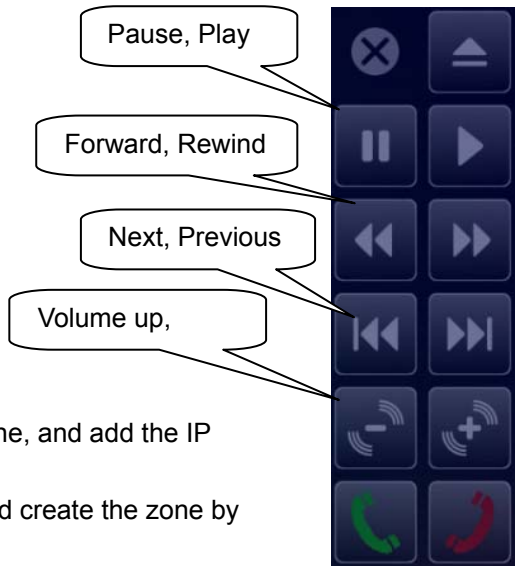
3.1.5.1. Virtual Zones

Virtual zones serve for control of the device by means of eLAN-IR (infrared codes).

Each zone can have one eLAN-IR. One virtual zone can transmit up to 9 different codes.







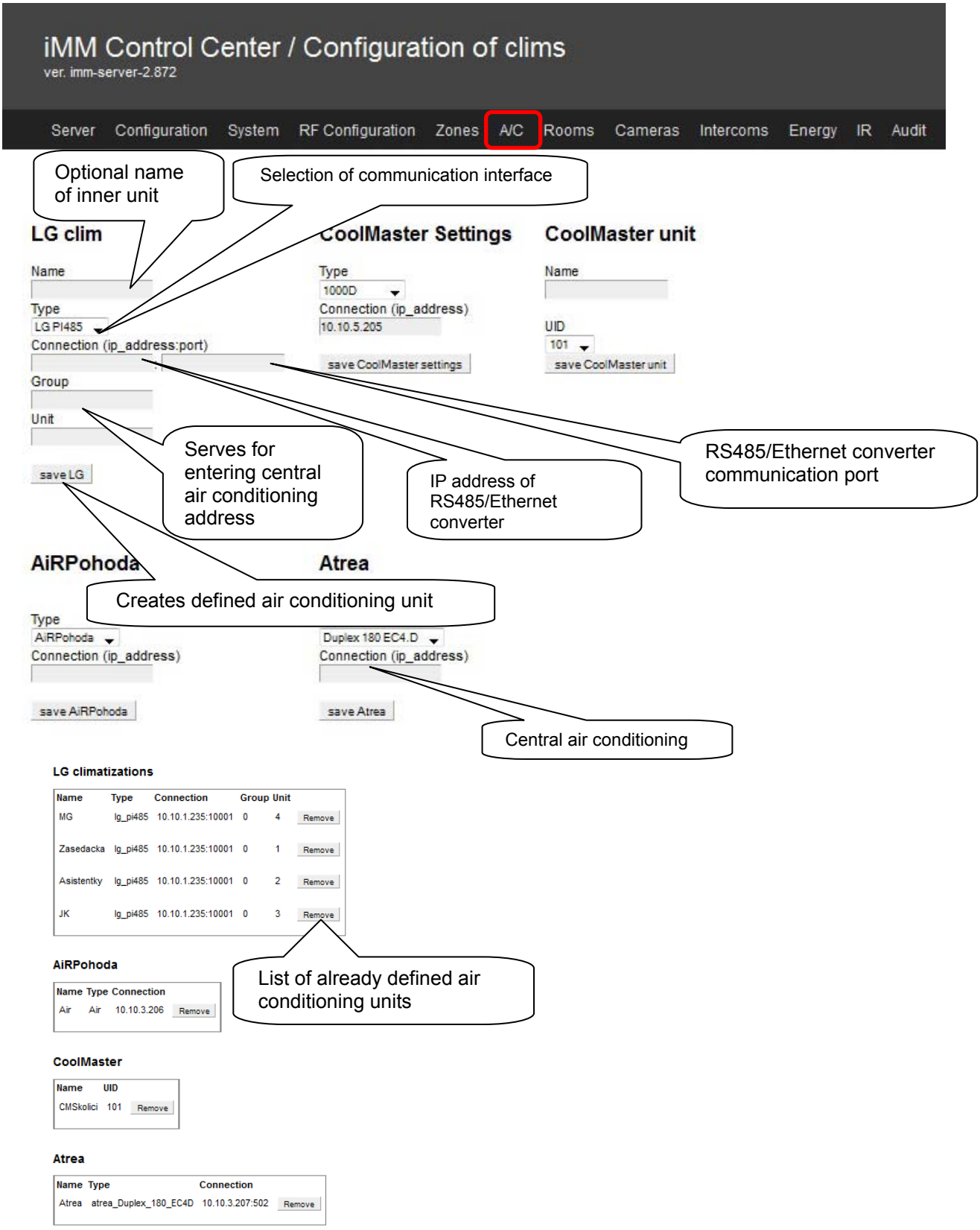
Read more about IR codes in chapter 3.1.9 IR

Proceed as follows to make Virtual zone run:

1. In the bookmark Zones type the name of the zone, and add the IP address of eLAN-IR as the IP address.
2. Ask “yes” to the question “Is it virtual zone?”, and create the zone by pressing „create“.
3. Below, in the bookmark Zones, there is a list of defined virtual zones; there click on Configure to configure the zone.
4. The names you see are names of buttons in iMM Application (on the right side, primarily serving for control of multimedia).
5. The first optional window is the number of IR signal you want to transmit. The second column offers 3 options. These options belong to the number of output on eLAN-IR. In the third window type the number of IR signal repetitions (1 as standard). The fourth window defines the gap between repeated IR code transmission (0 as standard).

3.1.6.Bookmark A/C

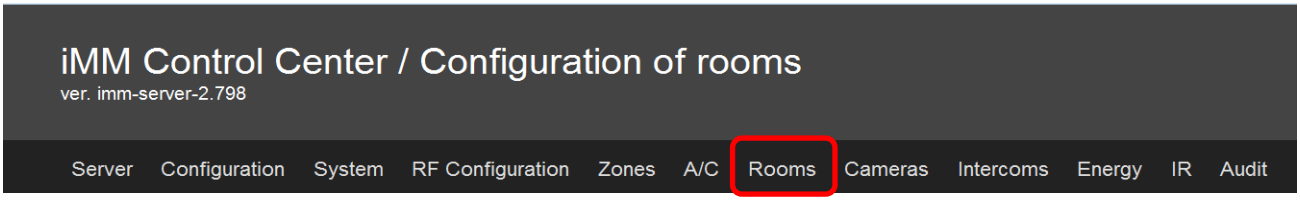
Serves for definition of air conditioning units and their control directly by means of iHC application. Supported communication card for air conditioning units is LG je PI485. See 8.6.5 for wiring (Here you can see more information about indirect control of air conditioning units by means of CoolMaster unit).

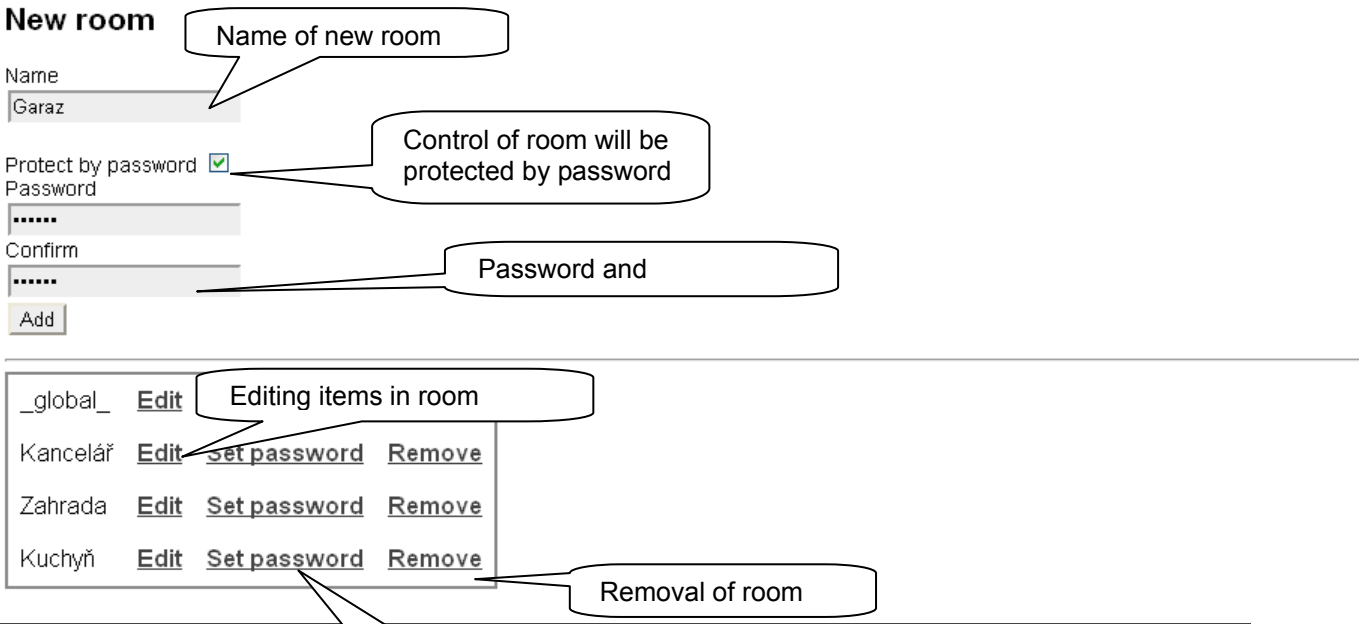


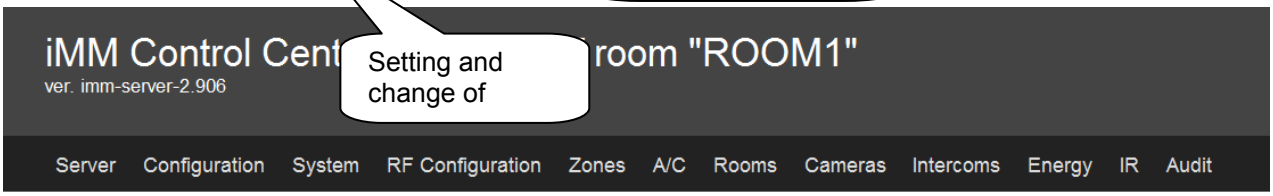
3.1.7.Bookmark Rooms

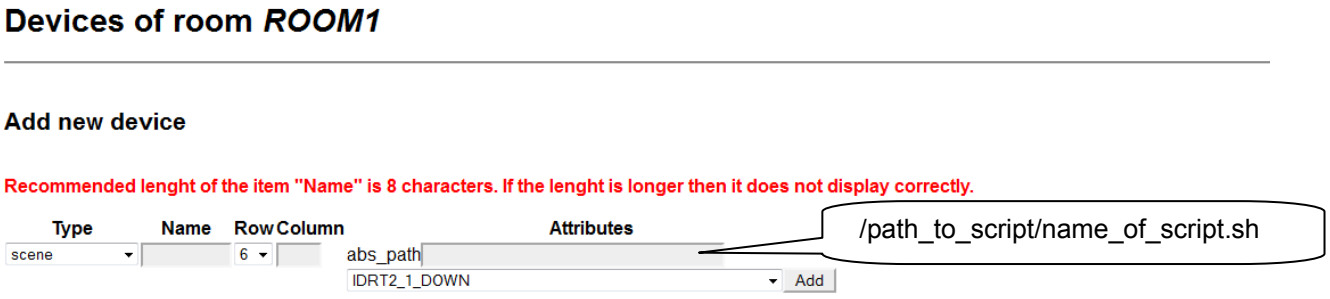
Serves for configuration of file rooms.cfg which uploads iHC Applications. Read more in the manual itself.

Rooms are in fact “virtual rooms” (groups) by which you can group required commands (buttons) and zones onto a single screen.


iMM Control Center / Configuration of rooms
ver. imm-server-2.798
Server Configuration System RF Configuration Zones A/C Rooms Cameras Intercoms Energy IR Audit




iMM Control Cent room "ROOM1"
ver. imm-server-2.906
Setting and change of
Server Configuration System RF Configuration Zones A/C Rooms Cameras Intercoms Energy IR Audit


Devices of room ROOM1
Add new device
Recommended lenght of the item "Name" is 8 characters. If the lenght is longer then it does not display correctly.
Type Name Row Column Attributes
scene 6 abs_path
/path_to_script/name_of_script.sh
IDRT2_1_DOWN Add

For control scenes can be use programmed script, that can execute various functions defined in it. It is necessary to observe the absolute path, starting with "/" and ending with the suffix script. "Sh" (shell) or ". Py" (python). Example: /home/imm/script_light.py

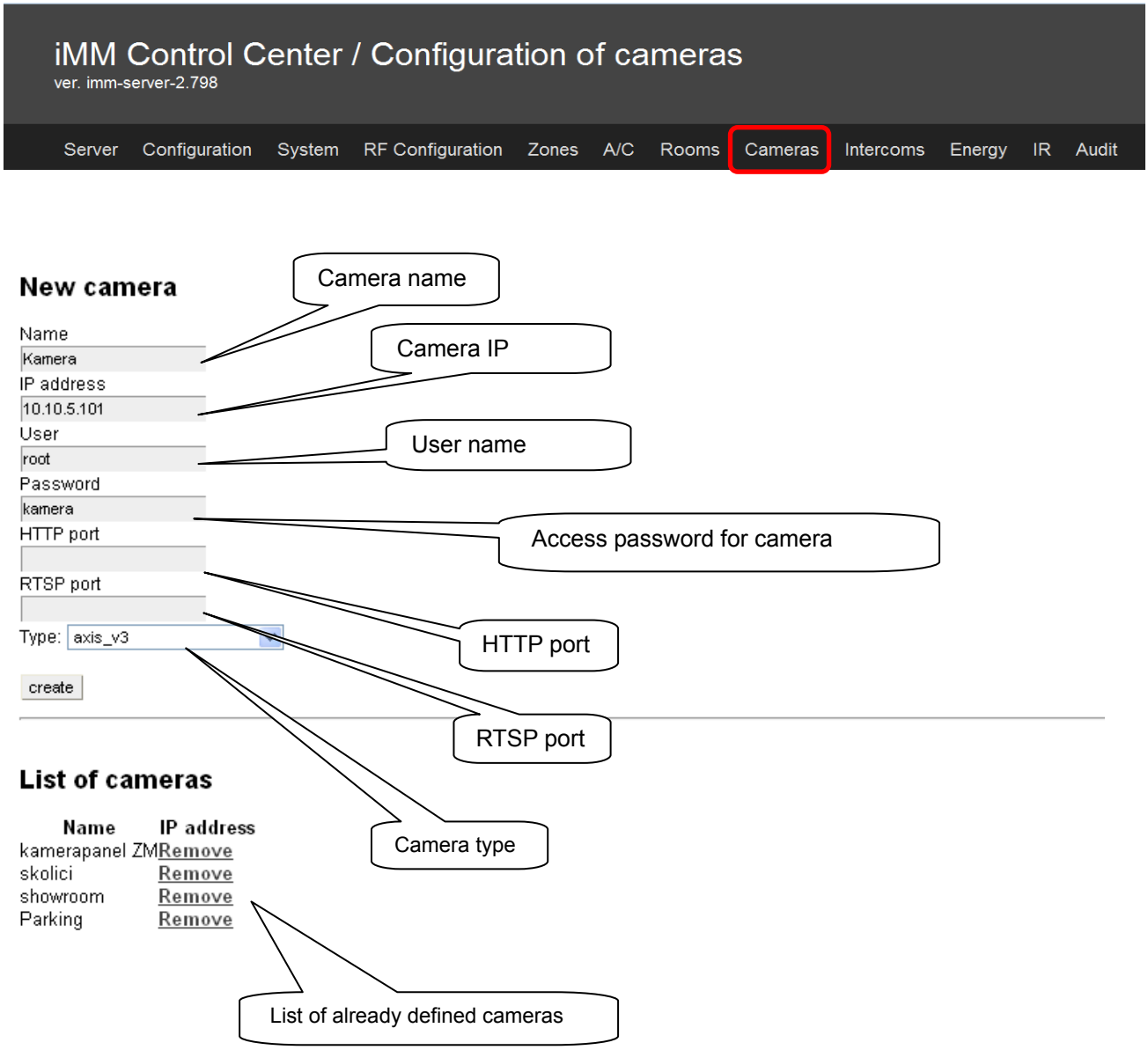
3.1.8.Bookmark Cameras

Serves for defining IP cameras you want to check and control by by means of iMM and iHC Application.

HTTP and RTSP ports are only entered if your IP cameras are configured for access from external network.

If you remotely connect camera via HTTP port, you will get to its web interface and you can fully control the camera. If via RTSP, then you will only get to camera STREAM.

Read more about settings of these ports in the camera user manual.



3.1.9.Bookmark Energy

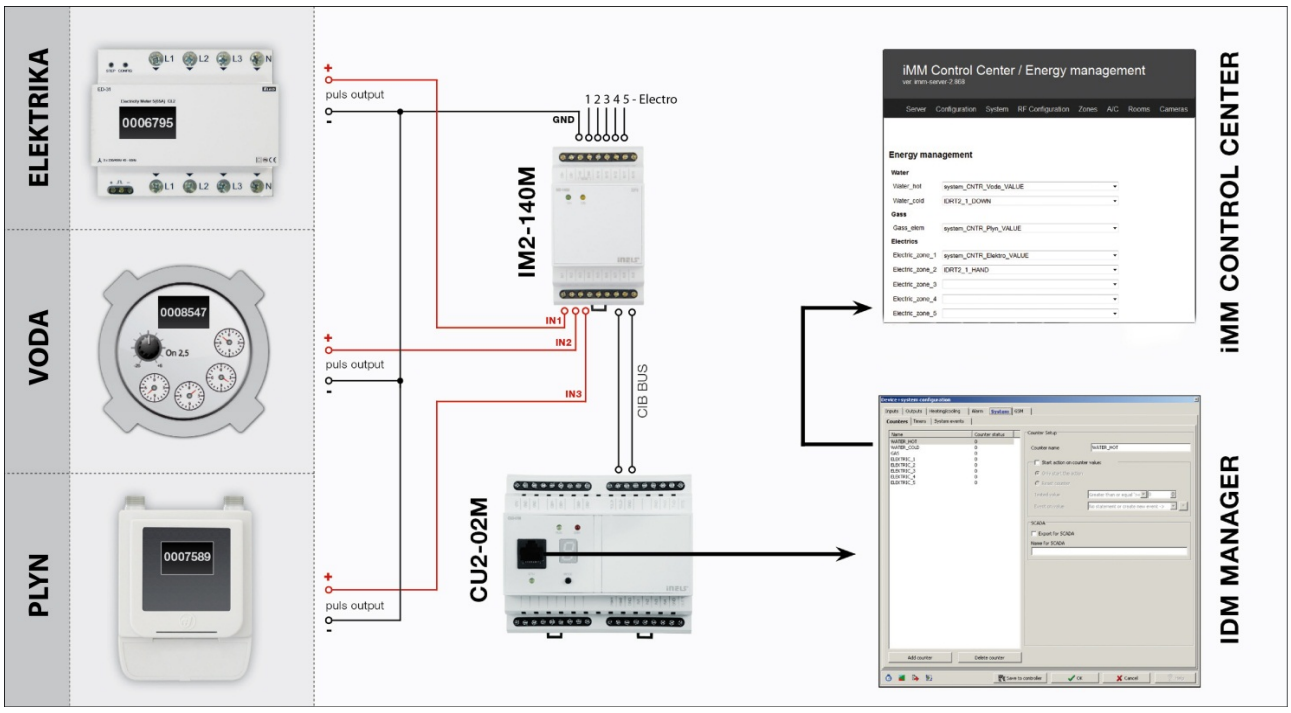
Directly in iMM Application the amount of energy consumption can be clearly displayed. Energy is recounted based on the amount of impulses that provide outputs from meters (gas-meters, electrometers, water-meters). Impulses are further processed in an optional input unit of system iNELS (IM2-140M, IM2-20/40/80B) in form of a counter. This value is by means of export.pub transferred to iMM Server where variable is assigned to Watter/Gas/Electrical in iMM CC on bookmark Energy. The setting of pulse conversion to unit of measure, selection of currency and setting the currency/unit is performed in iMM Application in activated Energy module. The Energy module allows recording of consumed energy for a day, week, month and year. Data are saved in iMM Server – the data do not get lost even in case of power shutdown or power cut. Consumption can be displayed in a table or graph.
Consumed energy is displayed not only in given quantity but also as financial value.

See below for the list of supported measuring instruments that have an impulse output:

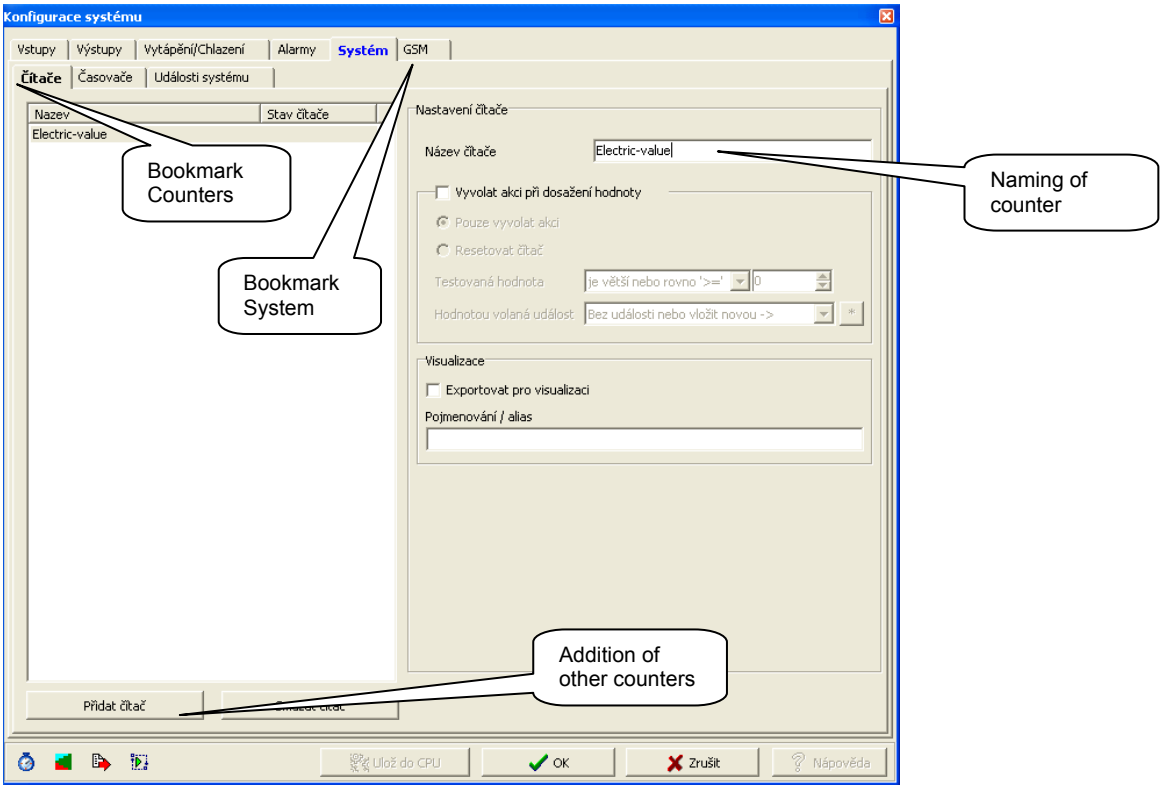
1. Click on the System Configuration button (icon of hammer and screwdriver – F11)
2. Select bookmark System -> counters
3. Add counter that you name by energy you want to measure
4. Create a new action that you name e.g.: uploading electricity
5. Add a command in the action which will be user action -> commands for counters -> increment counter
6. Select counter that corresponds with given action (e.g. for upload electricity you put counter electricity)
7. Add the action created as described above in system configuration to relevant binary input in action line when the input closes
8. Once the file export-pub is created and uploaded to iMM server, in bookmark Energy you can assign in the counter value line (electricity_VALUE). It must be VALUE in the line.

Connection of energy meter

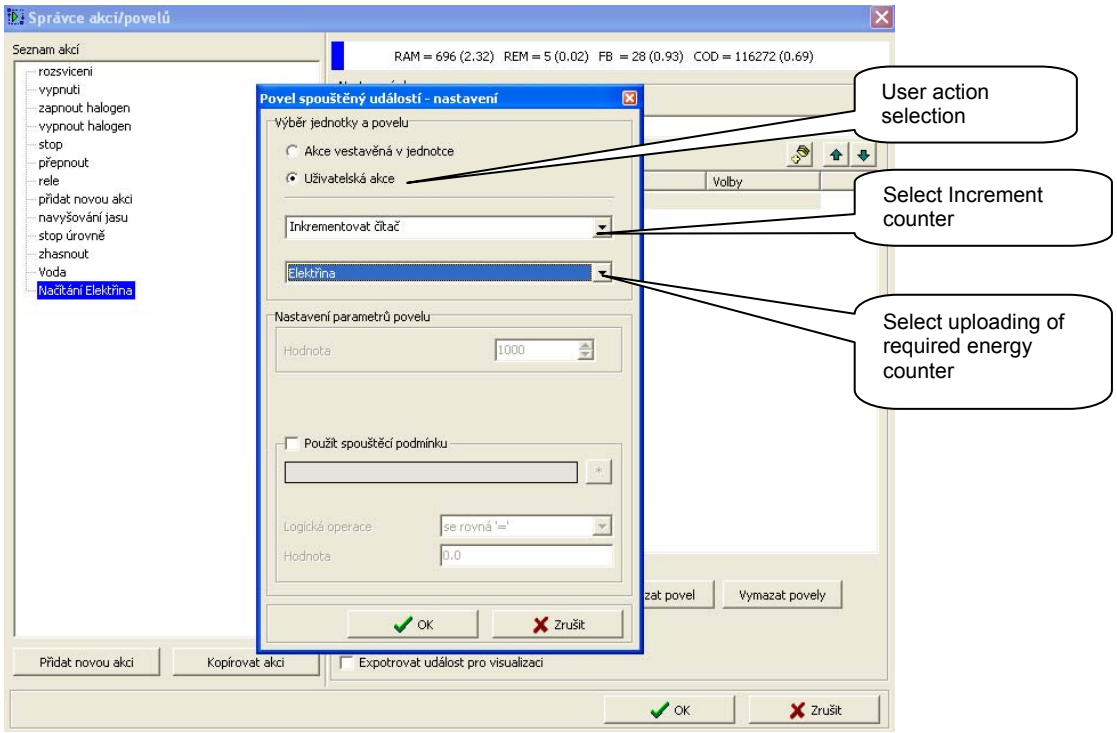
Energy meter connects by means of a binary output unit. Output from supported energy meter is distinguished to + a -, that's why polarity has to be maintained by bringing – minus to GND terminal and + plus to IN terminal. See 3.1.7. for the settings.



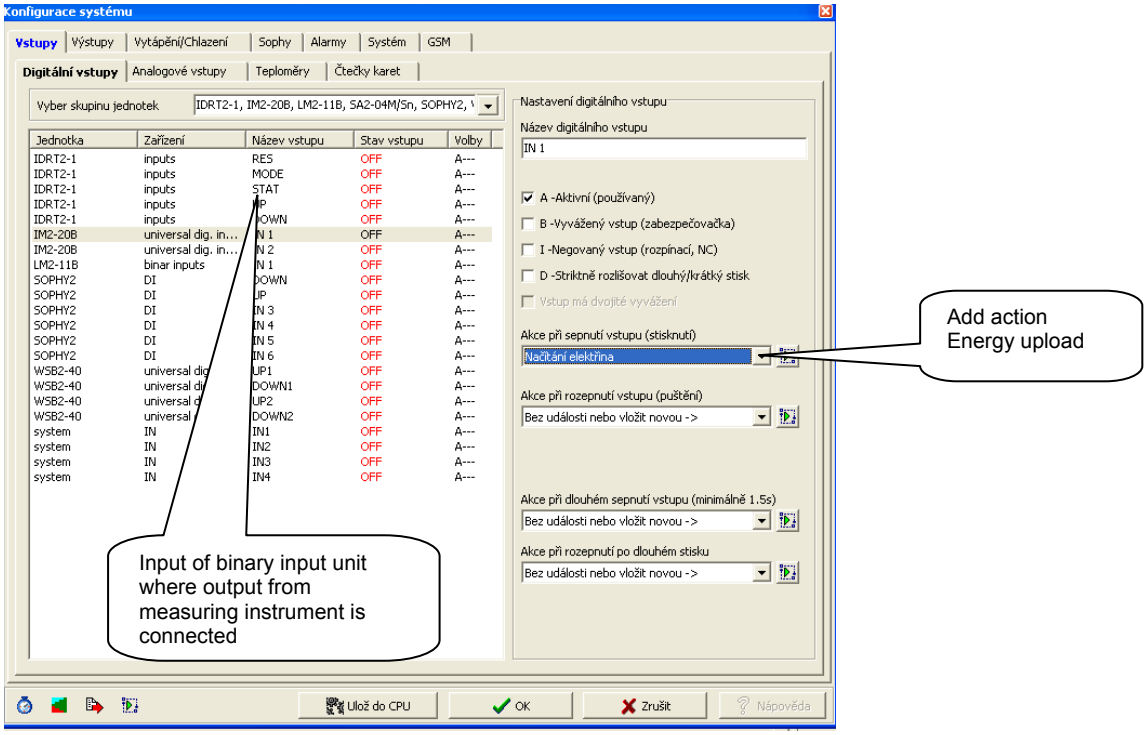
Creation of counter in iDM:



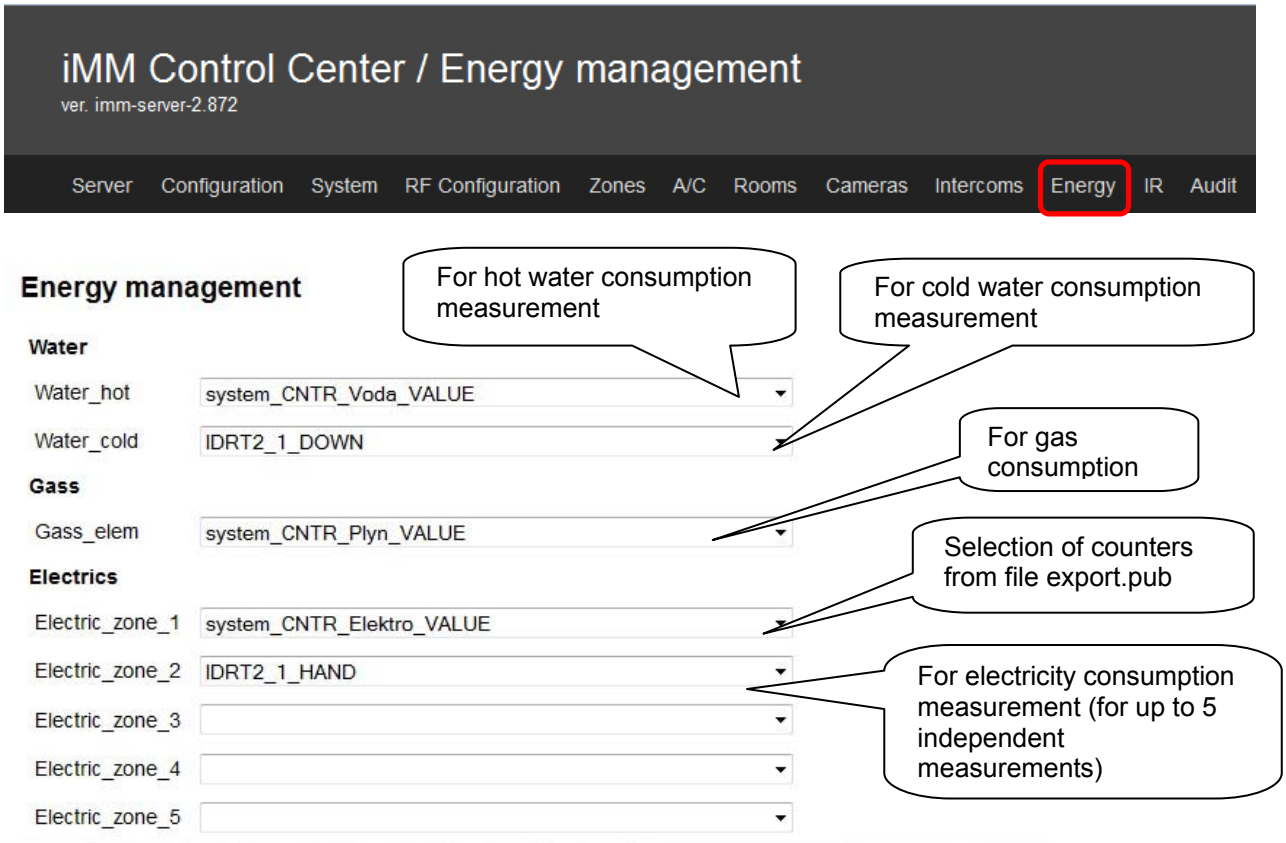
Creation of action “Counter incrementing":

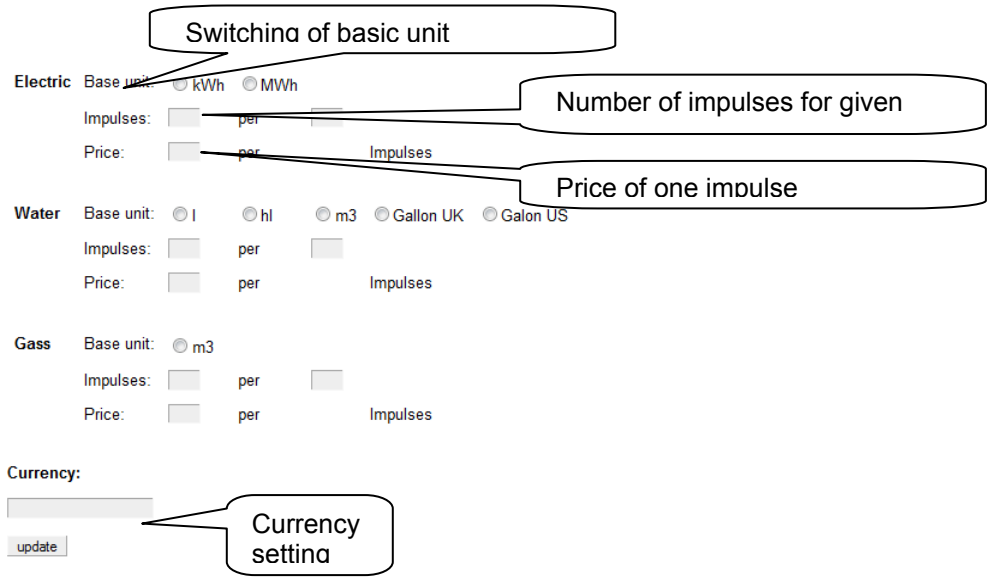


Action assignment to binary input where output from measuring instrument is connected.



Assignment of counter value in iMM Control Center





Example:

1 kWh = CZK 100.00 = 100 impulses

*Base Unit – **kWh***

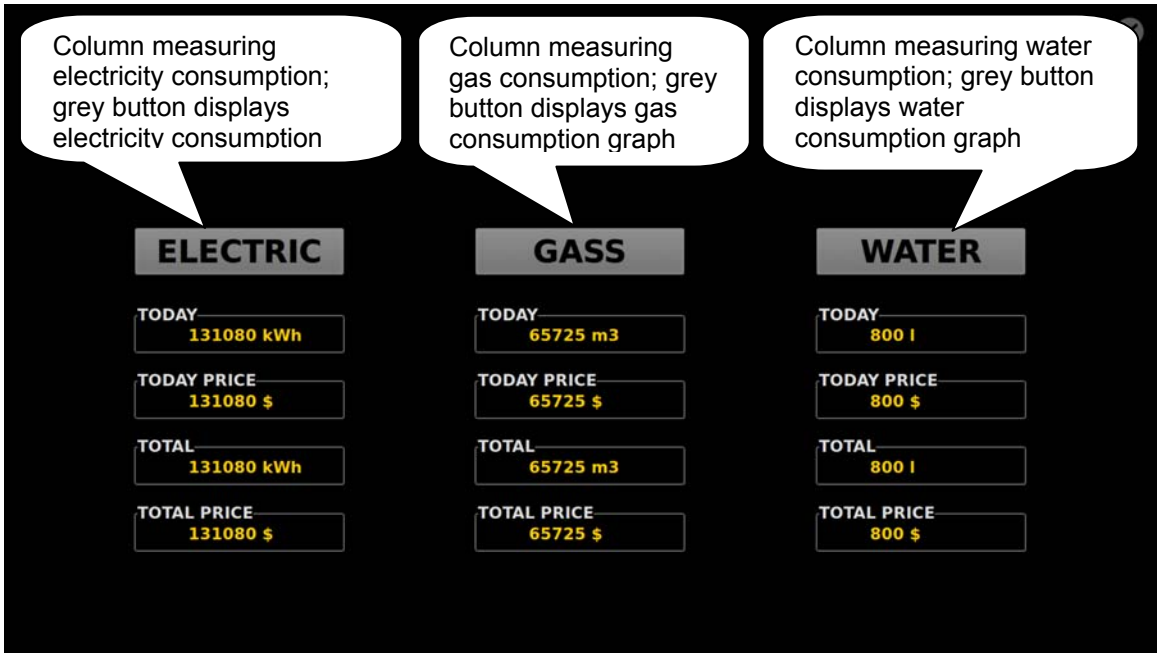
*Impulses – **100** per **1** kWh*

*Price – **1** per 1 impulse*

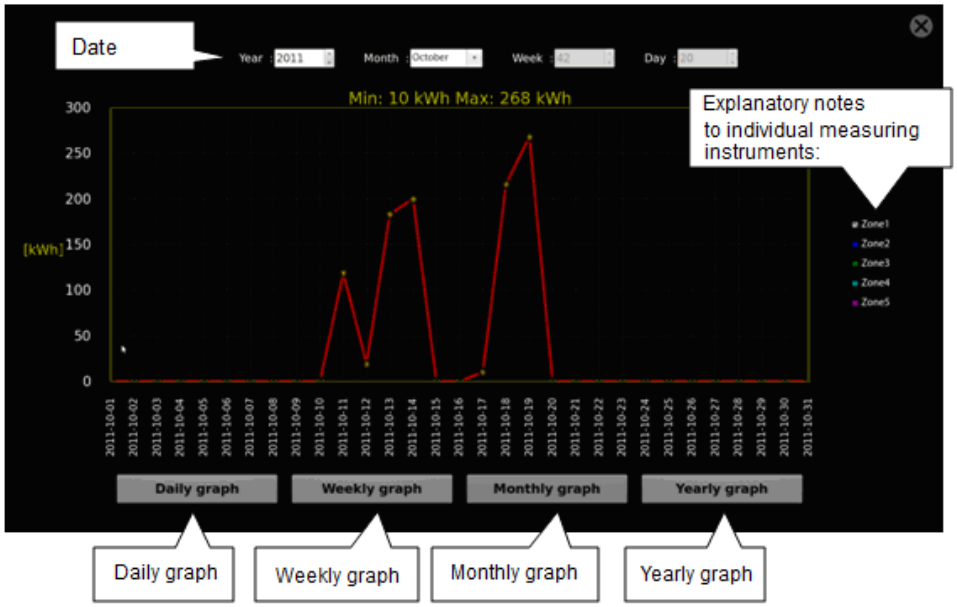
Setting energy meter in iMM

Select the “energy management” option from the list of elements. The icon we select can be any. After clicking on the newly added icon on FP, the basic energy management screen appears.

Displaying energy meter in iMM



After clicking on grey icons (electricity, gas, water), consumption of given energy displays in a clear graph. You can switch between daily, weekly, monthly or yearly graph. Displaying individual graphs can be left out from the legend of energies on the right side that support measuring from multiple sources (electricity, water)



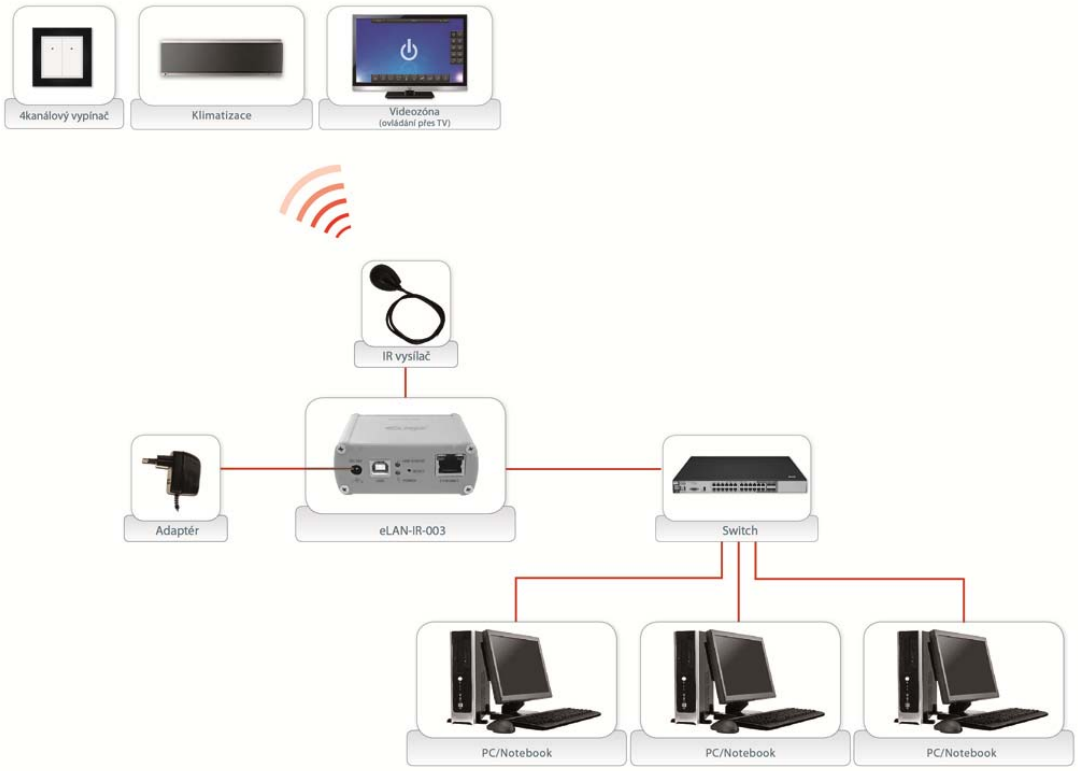
Information is read off the counter every second into a temporary file, and every hour average values are typed in file /etc/imm/em.dat which is used to count the values for graphs.

3.1.10. Bookmark IP (device control by infrared signal)

Serves for setting the eLAN-IR converter. The eLAN-IR converter enables control of devices of third parties (that cannot be controlled) by means of IR codes that the converter learns from the original remote control. Control from iMM can then be used in two different ways:

1. By means of virtual control in web browser (that you optionally predefined). In iMM you can call this virtual control up by pressing the panel button in the web interface of the IP converter.

2. By pairing with the given zone in which you wish to control the 3rd parties device (TV, amplifiers)



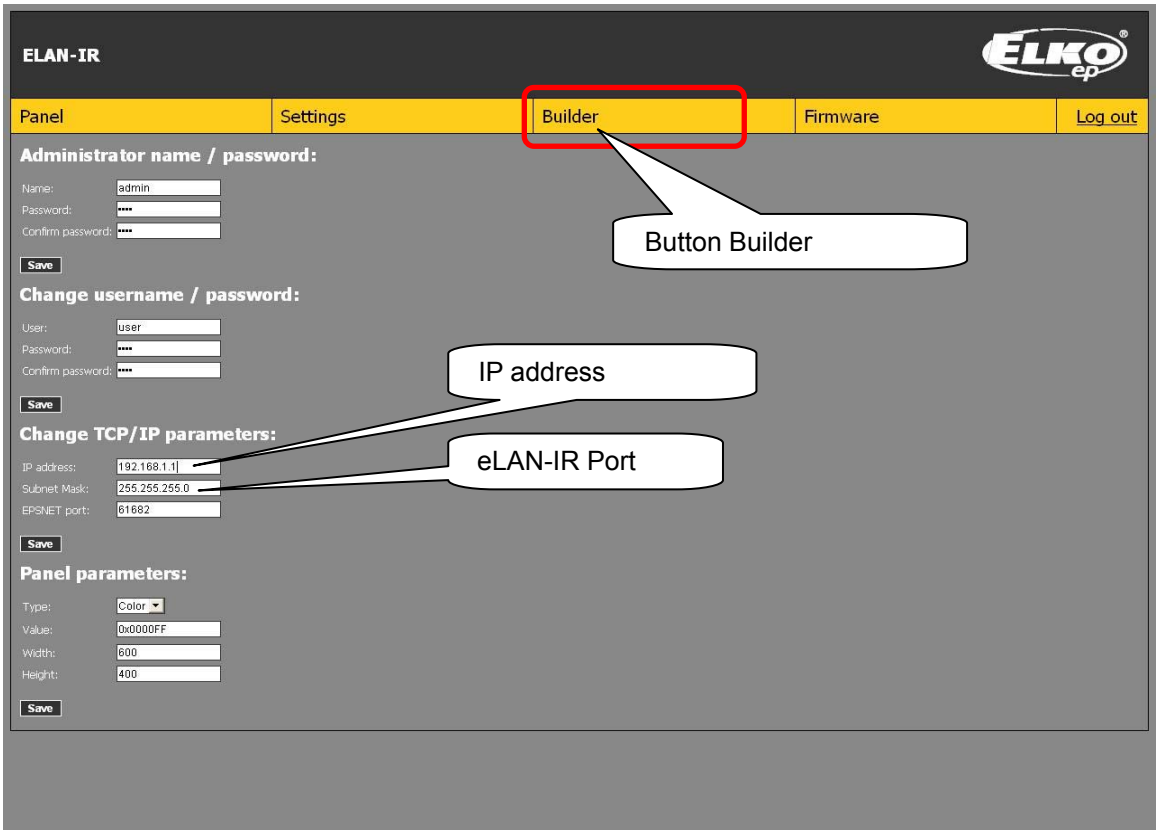
Procedure for entering IR codes:

1. Type the IP address and eLAN-IR port (**see more about the setting in the manual supplied with the eLAN-IR product**)

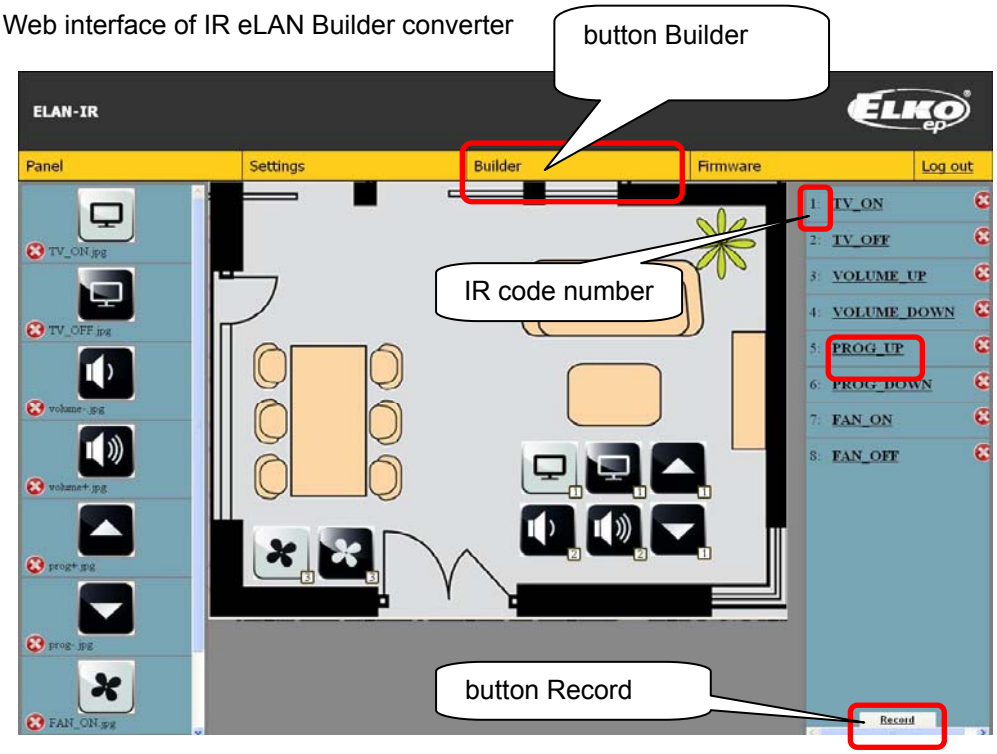
2. Go to eLAN IR converter Builder to upload necessary codes by pressing Record and directing the remote control to eLAN-IR; specifically to the receiving lens, and press relevant button.

3. In the right column you will see uploaded codes and assigned sequence numbers.

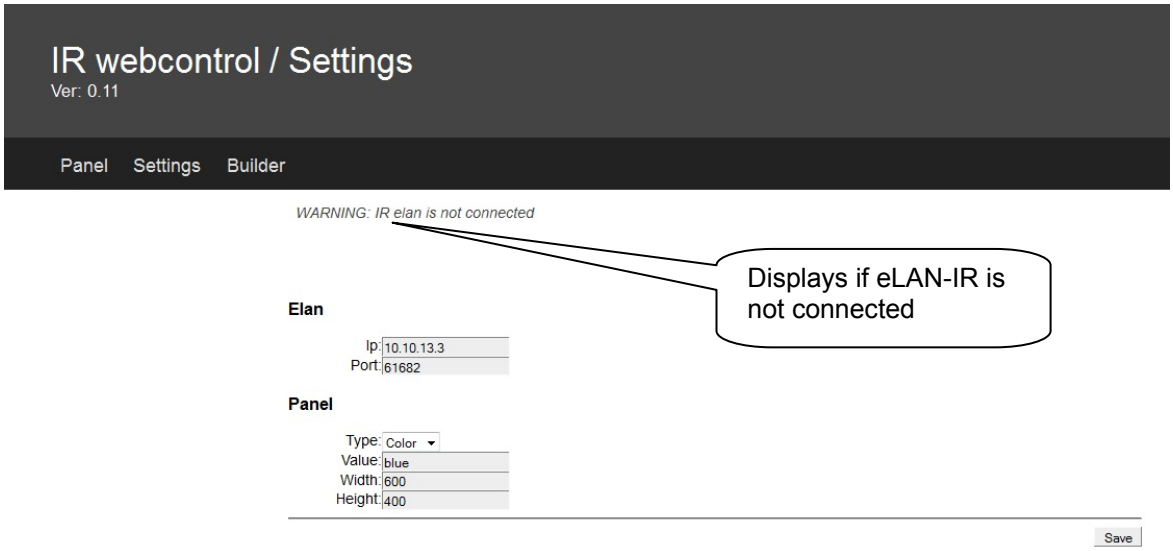
Web interface of IR eLAN settings converter

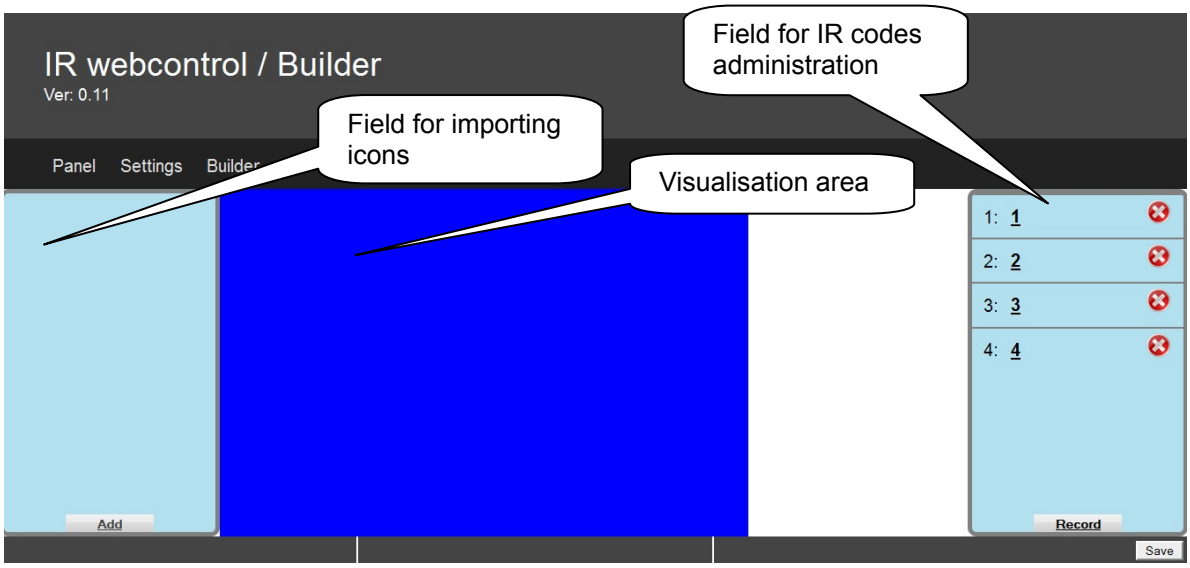


Web interface of IR eLAN Builder converter

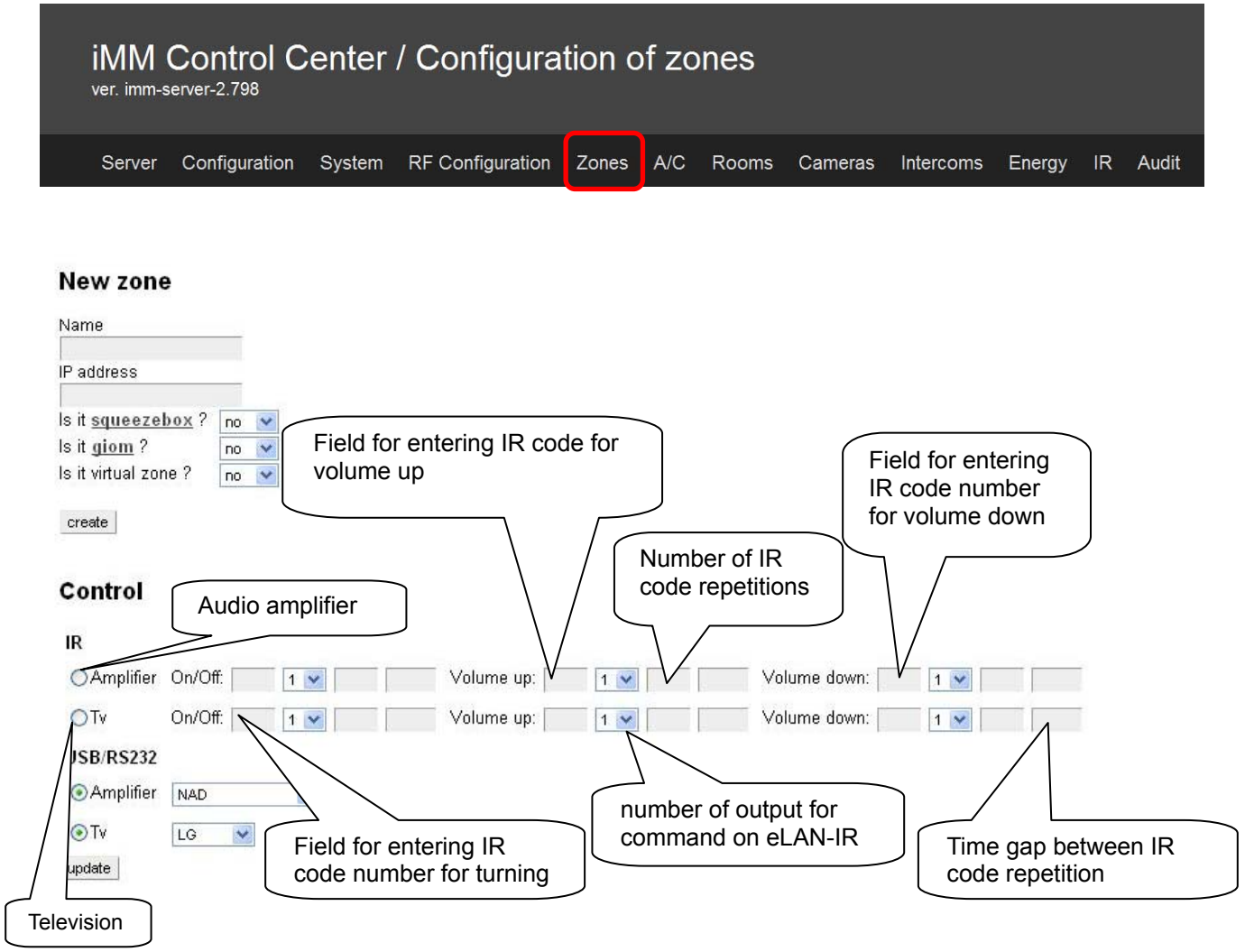


eLAN-IR can be set directly on web interface under IR bookmark.



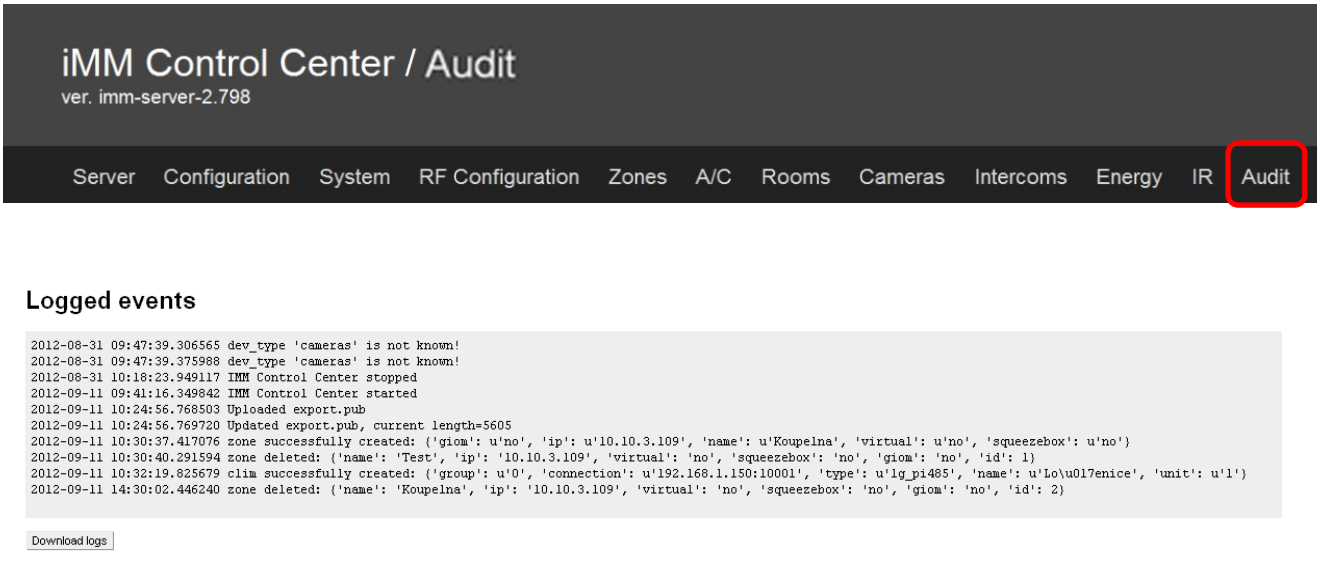


iMM Control Center


iMM Control Center / Configuration of zones
ver. imm-server-2.798
Server Configuration System RF Configuration Zones A/C Rooms Cameras Intercoms Energy IR Audit
New zone
Name
IP address
Is it squeezebox ? no
Is it giom ? no
Is it virtual zone ? no
create
Control
IR
Amplifier On/Off: 1 Volume up: 1 Volume down: 1
Tv On/Off: 1 Volume up: 1 Volume down: 1
USB/RS232
Amplifier NAD
Tv LG
update
Field for entering IR code for volume up
Field for entering IR code number for volume down
Number of IR code repetitions
Audio amplifier
number of output for command on eLAN-IR
Time gap between IR code repetition
Field for entering IR code number for turning
Television

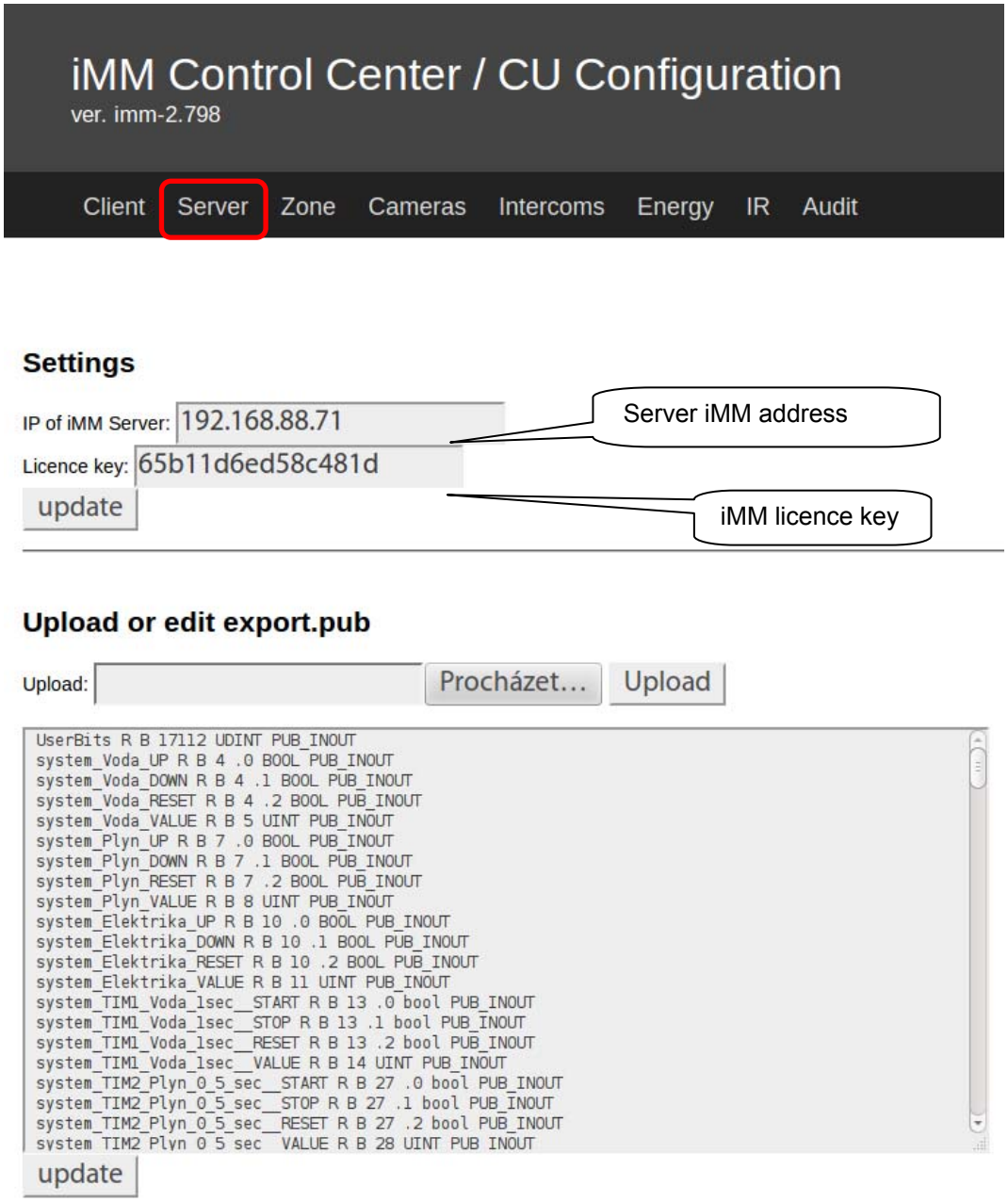
3.1.11. Bookmark Audit

Bookmark Audit serves for displaying and uploading LOG of events for diagnostic purposes of the application developer.


iMM Control Center / Audit
ver. imm-server-2.798
Server Configuration System RF Configuration Zones A/C Rooms Cameras Intercoms Energy IR Audit
Logged events
2012-08-31 09:47:39.306565 dev_type 'cameras' is not known!
2012-08-31 09:47:39.375988 dev_type 'cameras' is not known!
2012-08-31 10:18:23.949117 IMM Control Center stopped
2012-09-11 09:41:16.349842 IMM Control Center started
2012-09-11 10:24:56.768503 Uploaded export.pub
2012-09-11 10:24:56.769720 Updated export.pub, current length=5605
2012-09-11 10:30:37.417076 zone successfully created: {'giom': u'no', 'ip': u'10.10.3.109', 'name': u'Koupelna', 'virtual': u'no', 'squeezebox': u'no'}
2012-09-11 10:30:40.291594 zone deleted: {'name': 'Test', 'ip': '10.10.3.109', 'virtual': 'no', 'squeezebox': 'no', 'giom': 'no', 'id': 1}
2012-09-11 10:32:19.825679 clim successfully created: {'group': u'0', 'connection': u'192.168.1.150:10001', 'type': u'lg_pi485', 'name': u'Lo\u017enice', 'unit': u'1'}
2012-09-11 14:30:02.446240 zone deleted: {'name': 'Koupelna', 'ip': '10.10.3.109', 'virtual': 'no', 'squeezebox': 'no', 'giom': 'no', 'id': 2}
Download logs

3.2. Setting iMM CC on VZ iMM Client

Setting iMM Client proceeds similarly as iMM server (see 2.1); it downloads all the information about settings from iMM Server on the address http://localhost:8090. You only have to type the right IP address in the „Server“ bookmark in the “Address of IMM server““ line. If you earlier defined VZ as server, you need to remove duplicate zones, air conditioning units, rooms, cameras and energy meters from relevant bookmarks.


iMM Control Center / CU Configuration
ver. imm-2.798
Client
Server
Zone
Cameras
Intercoms
Energy
IR
Audit
Settings
IP of iMM Server: 192.168.88.71
Licence key: 65b11d6ed58c481d
update
Server iMM address
iMM licence key
Upload or edit export.pub
Upload:
Procházet...
Upload
UserBits R B 17112 UDINT PUB_INOUT
system_Voda_UP R B 4 .0 BOOL PUB_INOUT
system_Voda_DOWN R B 4 .1 BOOL PUB_INOUT
system_Voda_RESET R B 4 .2 BOOL PUB_INOUT
system_Voda_VALUE R B 5 UINT PUB_INOUT
system_Plyn_UP R B 7 .0 BOOL PUB_INOUT
system_Plyn_DOWN R B 7 .1 BOOL PUB_INOUT
system_Plyn_RESET R B 7 .2 BOOL PUB_INOUT
system_Plyn_VALUE R B 8 UINT PUB_INOUT
system_Elektrika_UP R B 10 .0 BOOL PUB_INOUT
system_Elektrika_DOWN R B 10 .1 BOOL PUB_INOUT
system_Elektrika_RESET R B 10 .2 BOOL PUB_INOUT
system_Elektrika_VALUE R B 11 UINT PUB_INOUT
system_TIM1_Voda_1sec__START R B 13 .0 bool PUB_INOUT
system_TIM1_Voda_1sec__STOP R B 13 .1 bool PUB_INOUT
system_TIM1_Voda_1sec__RESET R B 13 .2 bool PUB_INOUT
system_TIM1_Voda_1sec__VALUE R B 14 UINT PUB_INOUT
system_TIM2_Plyn_0_5_sec__START R B 27 .0 bool PUB_INOUT
system_TIM2_Plyn_0_5_sec__STOP R B 27 .1 bool PUB_INOUT
system_TIM2_Plyn_0_5_sec__RESET R B 27 .2 bool PUB_INOUT
system_TIM2_Plyn_0_5_sec__VALUE R B 28 UINT PUB_INOUT
update

4. Floorplan (FP) setting

Floorplans for control of Lighting/Heating

The below setting has to be performed for every iMM Client separately. Clients download from the server neither FP related information, nor images from the “floorplans” directory. Unlimited FP can be saved in “png“ format. Resolution and dimensions of the floorplan image are always adjusted automatically to 1046x1046 pix. Save floorplans in the folder: opt/imm/gfx/floorplans. Name of FP images will correspond with the name of the floorplan in Application.

The name of the floorplan after location of elements cannot be changed!

4.1. Moving between FP

Use the upo and down arrow to move between more than 4 FP. These arrows have paging function which means that one click up or down is always movement one page up or down. A page is always 4 FP.

4.2. FP icons

Icons of individual devices. If you wish to create your own icons go to chapter 8.1.

4.3. Adding elements in FP

a) Click on the place of FP with the right mouse button, where you wish to place the element icon.

b) A dialogue opens for selection of elements (from a list) and available icons.

c) Select an icon

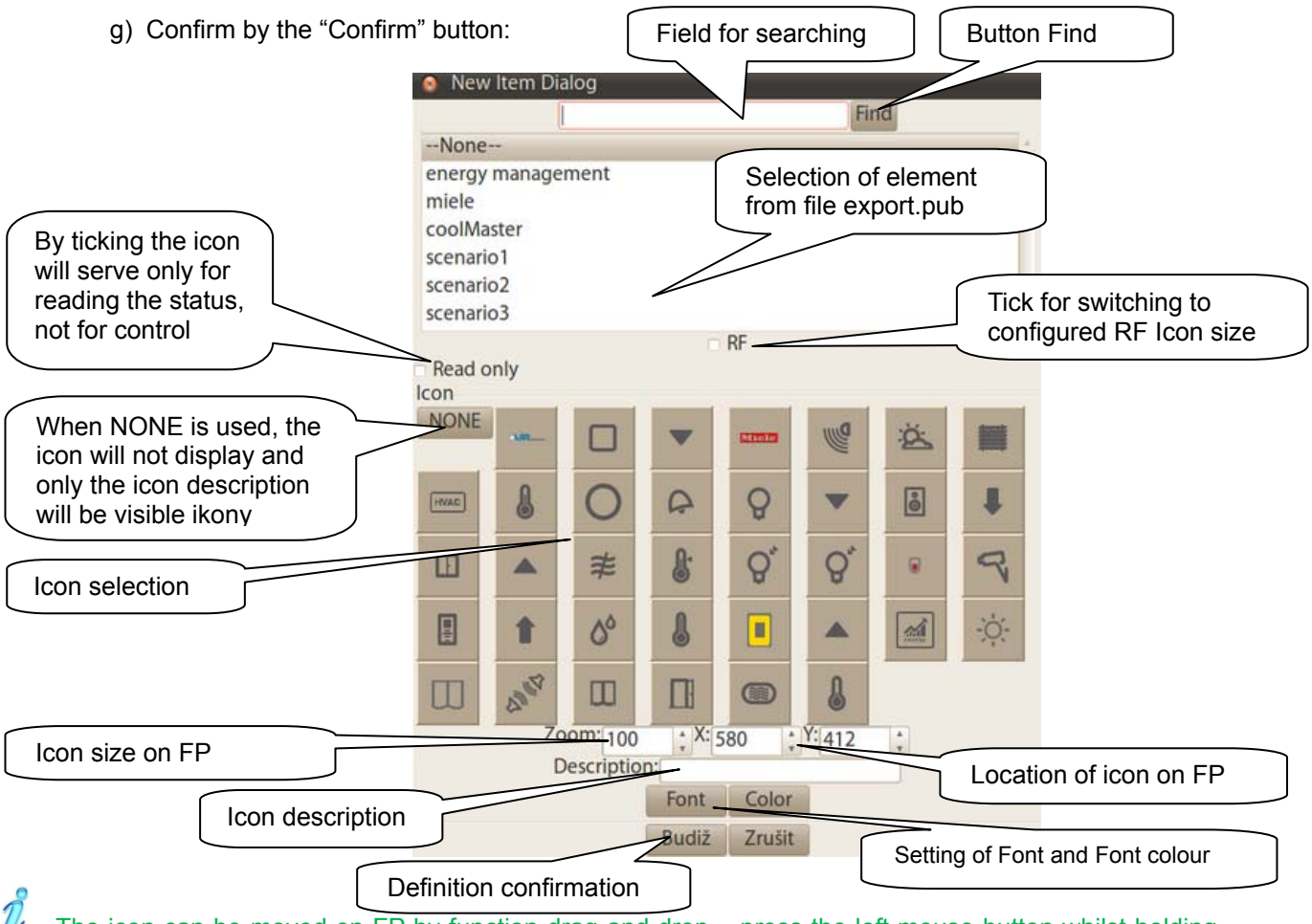
- Some icons in the selection dialogue filter out a list of actors (e.g. icon of thermometer filters out all actors except the temperature ones).

d) Select an element from the list (In dialogue you can look up available elements based on their name).

e) Type the description of the icon in the “Description” line.

f) Zoom defines the size of the icon and the XY coordinates define the location of icon on FP.

g) Confirm by the “Confirm” button:



The icon can be moved on FP by function drag and drop – press the left mouse button whilst holding down the Shift key.

Configuration of elements on FP can be copied between iMM client (VZ) by copying the below files:

/etc/imm/lights.dat for “Lights”

/etc/imm/heaters.dat for “Heaters”

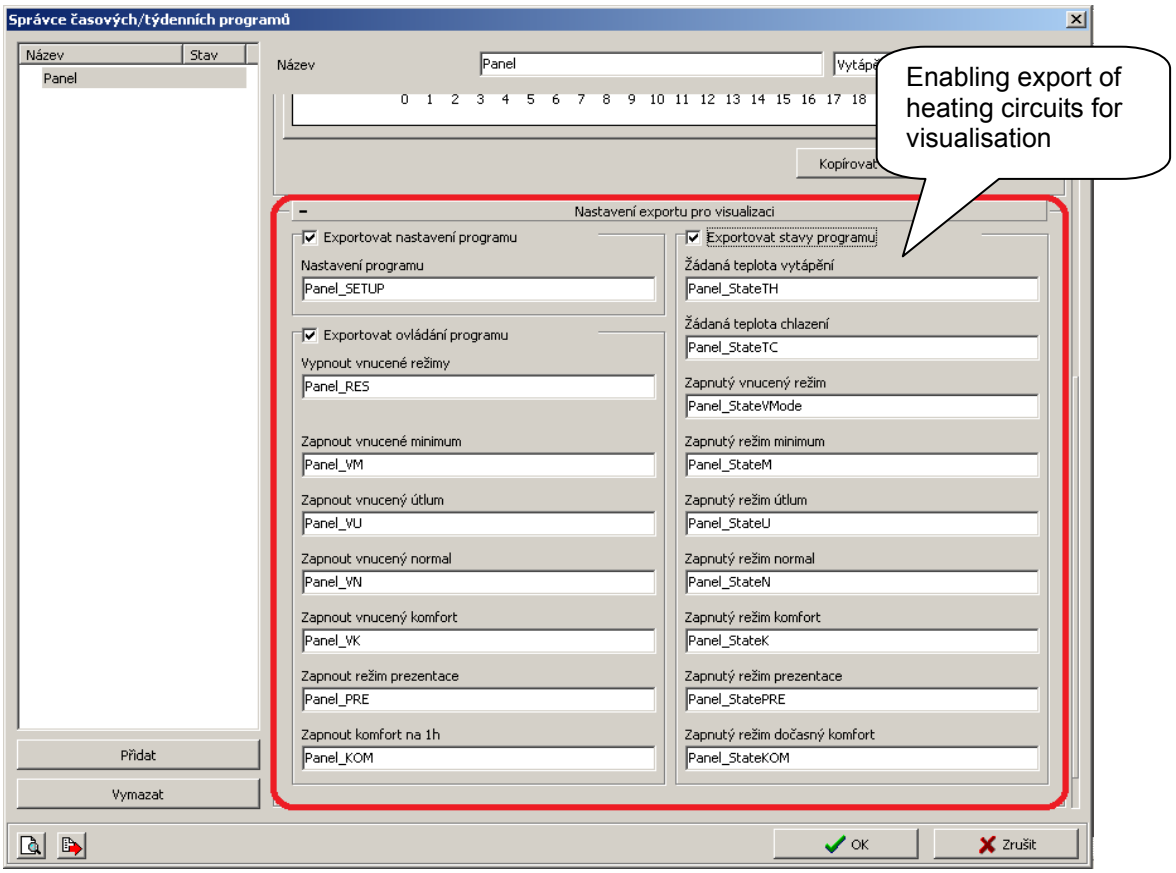
For successful transfer of FP elements you have to transfer even FP itself.

Air conditioning must always have the name on FP; otherwise it cannot be created, and the name must be the same like the one you typed in iMMCC.

4.4. Heating

With the controls on the right side, FP heating is adapted to control the heating. There you can change setting of individual preset heating modes (Minimum, Low, Normal, Comfort, Attenuation, Auto). Addition of elements is governed by rules described in chapter 4.1.

a) If you wish to control individual heating modes, you have to enable export of control and setting of heating program in IDM software. In time/weekly program administrator a part of export setting for visualisation.



b) After clicking on FP select export.pub from the list of elements; it contains StateTH.

c) Select the thermostat icon

d) $o °C is typed automatically in “description” (in the icon description you add variable temperature value behind $o).
You can add your own icon description behind the legend.

e) Thermometer icon appears on FP with selected thermal mode and temperature that corresponds with the selected mode. Modes can be alternated by buttons on the right FP side.

Komfort

Normal

Minimum

Attenuation

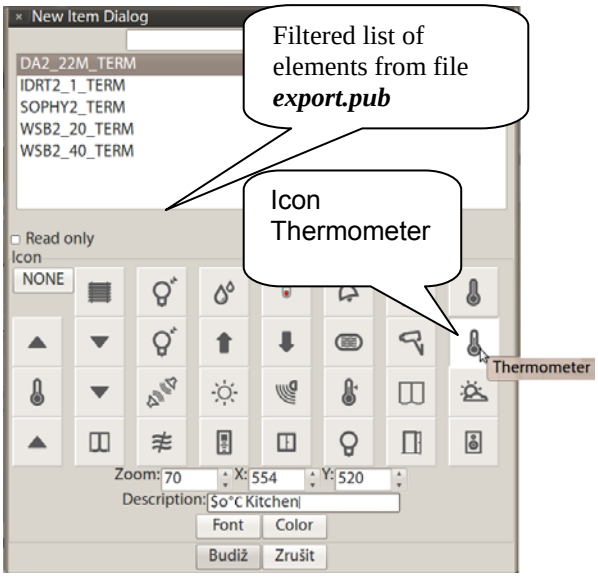
4.5. Lighting

With its controls, FP is designed for dimming and switching the lighting. Addition of elements follows the rules described in chapter 4.1. This FP is mostly used for addition of icons to control sun blinds, Miele household appliances and energy consumption (energy management). Use the icon to get to Floorplan from the basic iMM Application screen.

4.6. Displaying variables in icon description

If you want to display variable value in icon description, e.g. information from thermal sensor, information from dimmer, etc.

Type "$" (without the quotation marks) and the unit – e.g. "°C" for temperature; the same procedure to display the value of brightness in dimmable lights in %. In some actors the displayed unit is added automatically.



Example:

Temperature:

Select the icon Thermometer

IDRT2_1_TERM X F 36 REAL PUB_INOUT
Dialogue window for defining a new icon

Description: $o °C Outside temperature

Displayed in iMM as: 23.5 °C Outside temperature

Dimming:

lbc02_rs_dimming_ fluorescenttube _right R F 18516 REAL PUB_INOUT

Description: $o % Fluorescent tube kitchen

Displayed in iMM as: 50 % Fluorescent tube kitchen

Actual value:

if there are "actual data from input", e.g. voltage analogue input from meteostation when 5V = 100km/hr, we will use the formula "$o*20 km/h".

Example:

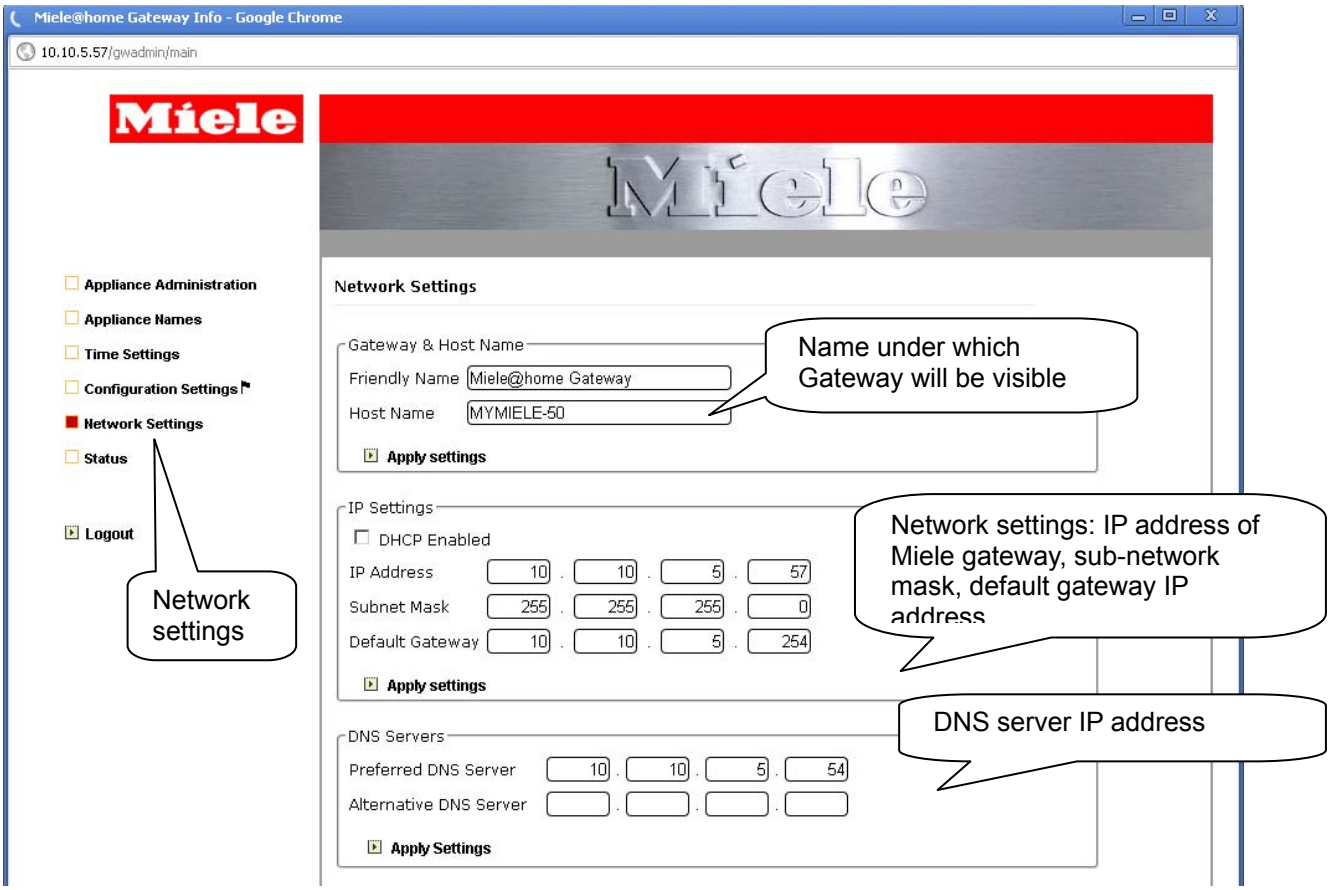
*Description: $o*20 km/hr Wind speed*

Displayed in iMM as: 60 km/hr Wind speed

4.7. Connection of Miele household appliances

To connect to iMM you need to install the Miele Gate-wayXGW 2000 which receives information from Miele device on PowerLine, and sends it on LAN network further to iMM Server.

(All devices must be on one phase. Communication on power line is enabled by all Miele appliances that have logo miele@home.)

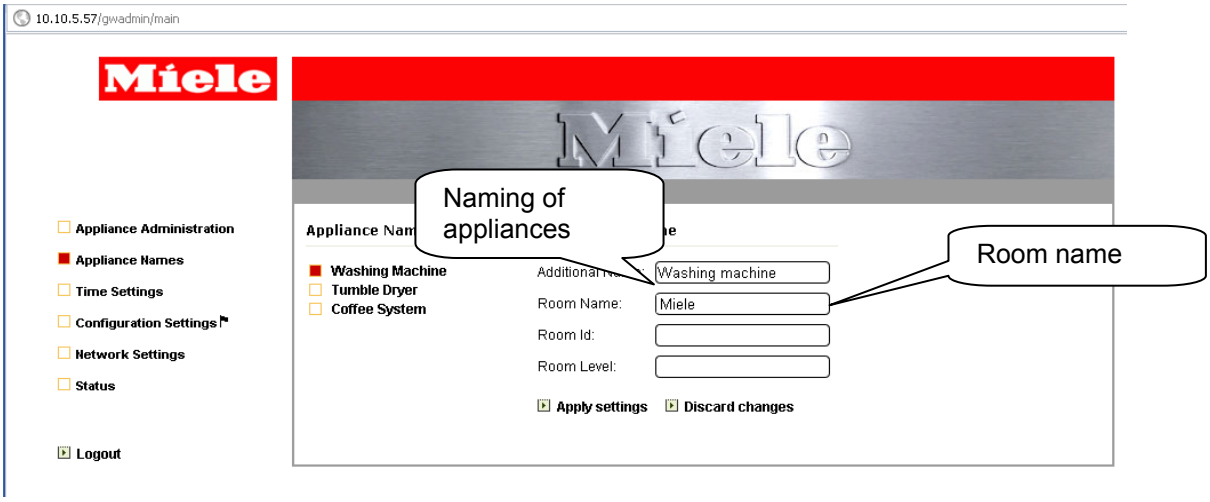


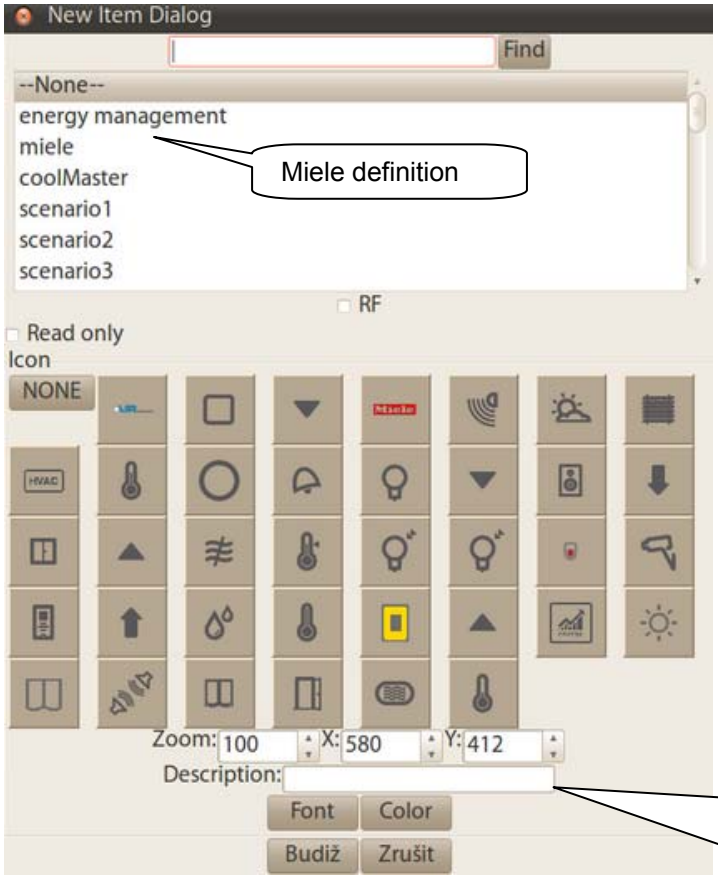
XGW 2000 network setting

The set MieleGateWay IP address is recorded on iMM server in file /etc/imm/miele where the basic shape is already set within the factory settings.

Select “miele” from the list of elements (the icon assigns automatically). To describe the icon it is **NECESSARY** to keep the same name as is the name of the room – for the appliance on the web interface (Room Name). Only appliances with the same room name will display – to ensure better arrangement in Control of Miele appliances.

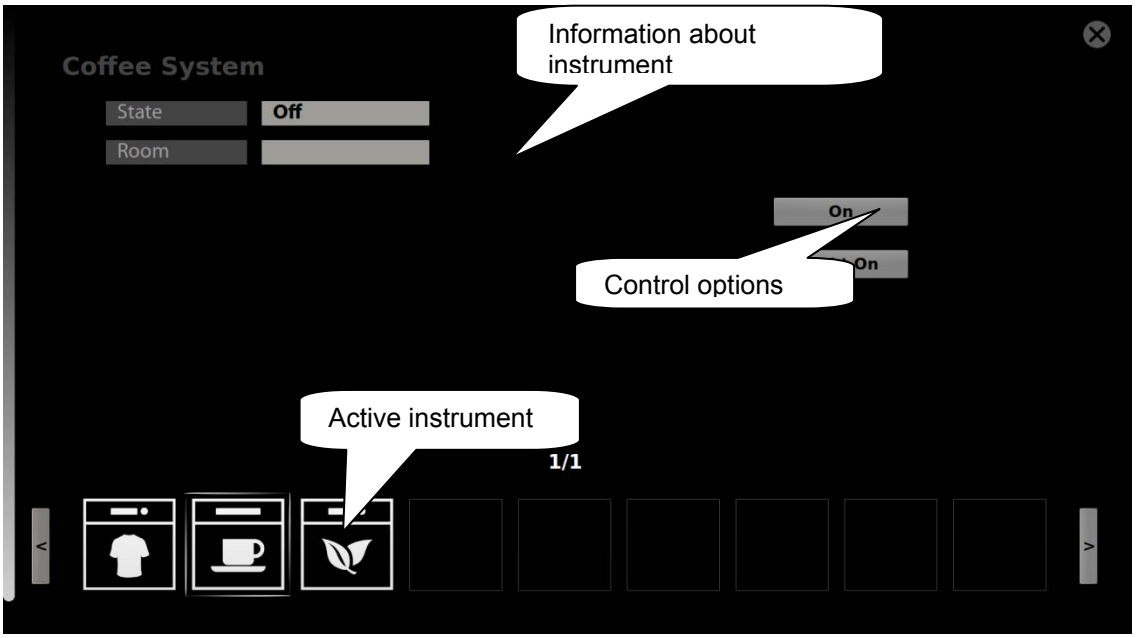
To connect Miele@Home to iMM system please restart the iMM Server.



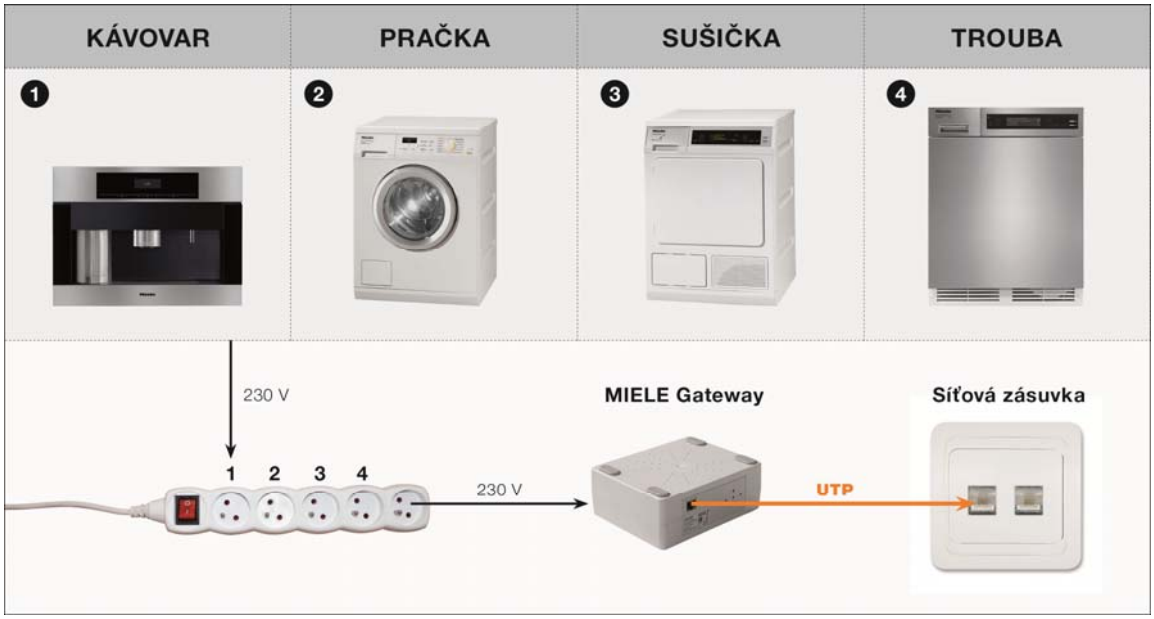


If you wish to display all appliances under a single icon, do not type any text in Description to the miele element.

In the control screen you can see the status of individual appliances (name and active controls).



Basic Miele wiring



5. Television

5.1 Adding TV channel to iMM

a) Make a tune channels on VU+ Solo2 (VU+)

b) In the web interface, enter the IP address VU+.

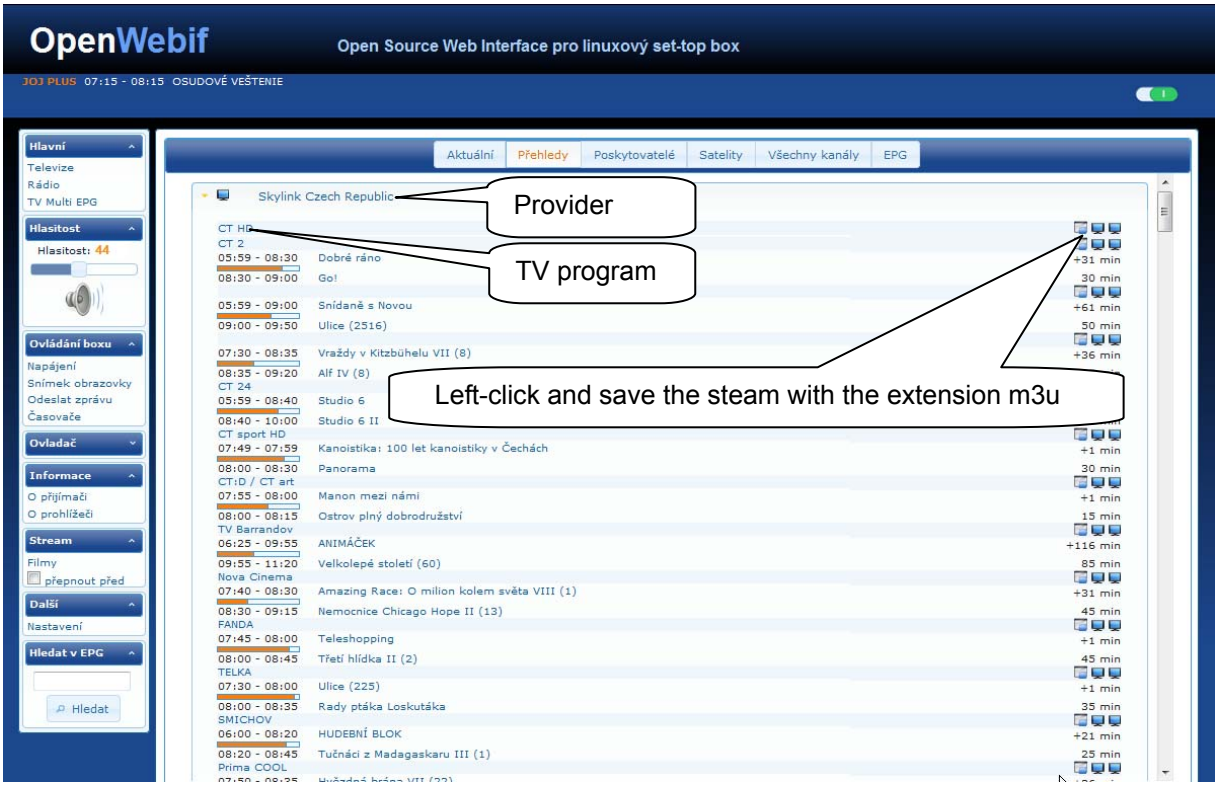
c) On the main page, select your satellite provider (depending on the service used).

d) Clicking the left mouse button on the first icon in the row of the screen to save the stream "Save target as ..." to the directory/home/imm/Television, in "name_program.m3u".

Files that are created automatically in your next m3u files are systemic (program_epg.txt) and contain EPG information. These files can be deleted (by highlighting and pressing delete on the keyboard) when you have a problem with EPG readings from the server.

The file can be play back for checking the functionality in the program VLC. When you start a terminal and type: vlc (contents m3u)

e.g.. vlc http://10.10.3.155:8001/1:0:1:3700:C8C:3:EB0000:0:0:0:


OpenWebif
Open Source Web Interface pro linuxový set-top box
Provider
TV program
Left-click and save the steam with the extension m3u

example:

file of Stream contains this information:
http://192.168.1.251:8001/1:0:1:1F43:BC6:3:EB0000:0:0:0:

- *where 192.168.1.251 – is IP address VU+*
- *where 8001 is port on which VU+ communicates*
- *where 1:0:1:1F43:BC6:3:EB0000:0:0:0: is the stream code that program*

5.2 EPG – Electronic program guide

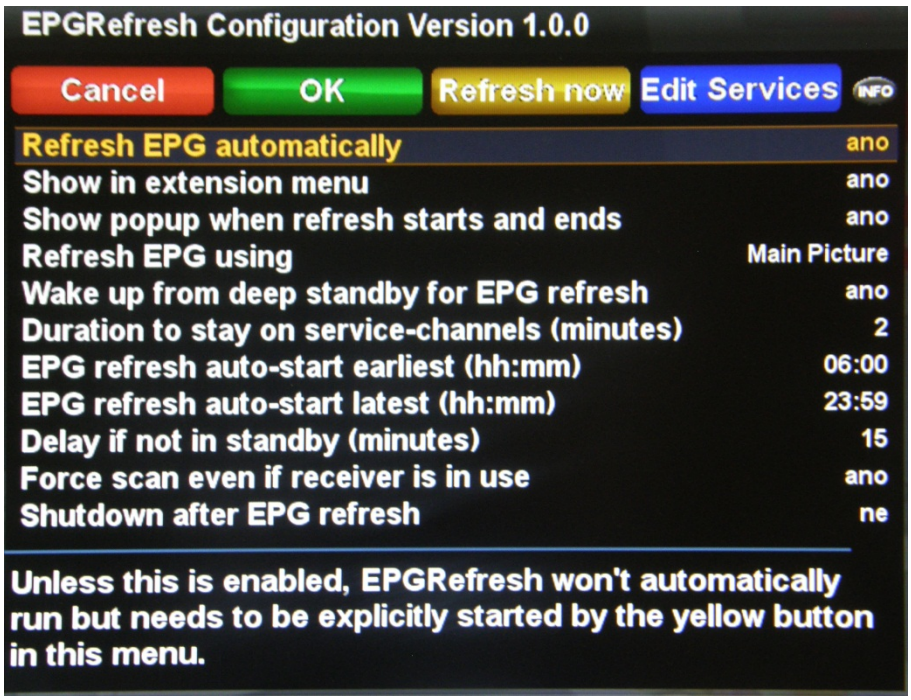
Installation of plug-in EPGREFRESH

Installation via IR controller on graphic interface in VU+ SOLO2

- updates for the Enigma interface (Menu > Settings > update software)
- system reset (Menu > Standby restart > Reset enigma)
- plugin installation EPGREFRESH (Menu > Plugin > EPGrefresh > download install)
- system reset (Menu >Standby restart > System reset)

Setting of downloading EPG

Menu > Plugin > EPGREFRESH


EPGRefresh Configuration Version 1.0.0
Cancel
OK
Refresh now
Edit Services
INFO
Refresh EPG automatically ano
Show in extension menu ano
Show popup when refresh starts and ends ano
Refresh EPG using Main Picture
Wake up from deep standby for EPG refresh ano
Duration to stay on service-channels (minutes) 2
EPG refresh auto-start earliest (hh:mm) 06:00
EPG refresh auto-start latest (hh:mm) 23:59
Delay if not in standby (minutes) 15
Force scan even if receiver is in use ano
Shutdown after EPG refresh ne
Unless this is enabled, EPGRefresh won't automatically run but needs to be explicitly started by the yellow button in this menu.

5.2.1 Settings of EPG in VU+

Settings > System > Setting EPG

Select all providers EITEPG, VIASAT, TEDMED, MHW.

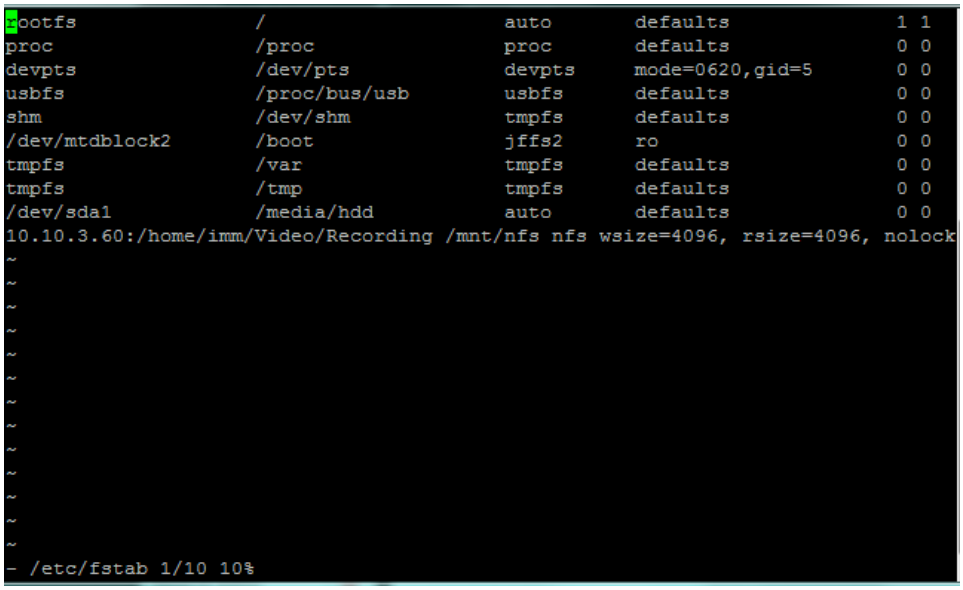
5.3 *Setting a storage for TV record*

e) In Terminal (called up by pressing CTRL+ALT+T), type the command “telnet ip_address_dreambox“ and enter login “root“ (there is no password); confirm by Enter.

f) Then type the command “jpico /etc/fstab“ to open the “fstab” file.

g) Use the arrows to move to the end of the file, and add the below line:

„ip_address_iMM_server“:/home/imm/Video/Recording /mnt/nfsnfswsize=4096, rsize=4096, nolock 0 0


rootfs / auto defaults 1 1
proc /proc proc defaults 0 0
devpts /dev/pts devpts mode=0620,gid=5 0 0
usbfs /proc/bus/usb usbfs defaults 0 0
shm /dev/shm tmpfs defaults 0 0
/dev/mtdblock2 /boot jffs2 ro 0 0
tmpfs /var tmpfs defaults 0 0
tmpfs /tmp tmpfs defaults 0 0
/dev/sda1 /media/hdd auto defaults 0 0
10.10.3.60:/home/imm/Video/Recording /mnt/nfs nfs wsize=4096, rsize=4096, nolock
/etc/fstab 1/10 10%

Example of fstab file

h) Save (CTRL+O, Enter), and terminate the “fstab” file by pressing the key (CTRL+X).

i) Type the command “mkdir /mnt/nfs“ and then command “mount /mnt/nfs“.

j) Type command “reboot“ to restart DB.

k) Go to DB and set the folder in the record settings: “Setting – system - recordingpaths“. Ad “„/mnt/nfs“ and remove the others. Use colour buttons and the “menu” button on the control, as advised in the description on the screen.

l) After the restart, your DB is ready for recording in iMM. Records are available in iMM, in module “Video” in folder “Recording” in format – the file is always - RRRRMMDD HHMM –TV program name.ts (example: *20120213 1320 - FILMBOX HD.ts*).

5.4 *Recording programming*

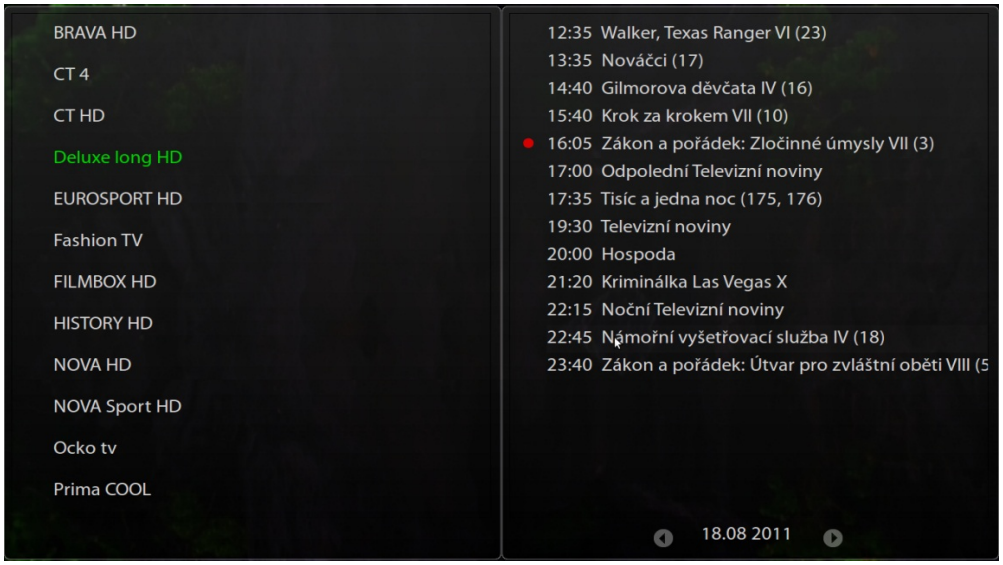
You can start recording immediately by pressing the button on the control panel , and terminate by pressing the next one.

Recording is timed by clicking on the name of program in EPG. The beginning of recording is then set on the streamer by EPG, and the end of recording by the beginning of the next program. If the program runs already, recording starts immediately.

During recording iMM Client need not be on; the record takes place on iMM Server.

You can set recording so far ahead where the given program's EPG reaches.

Number of channels that are recorded at the same time is limited as online watching from streamer (depends on the number of streamers, or on the number of tuners).



Recording by means of EPG

6. Installation and configuration of AudioZone (AZ)

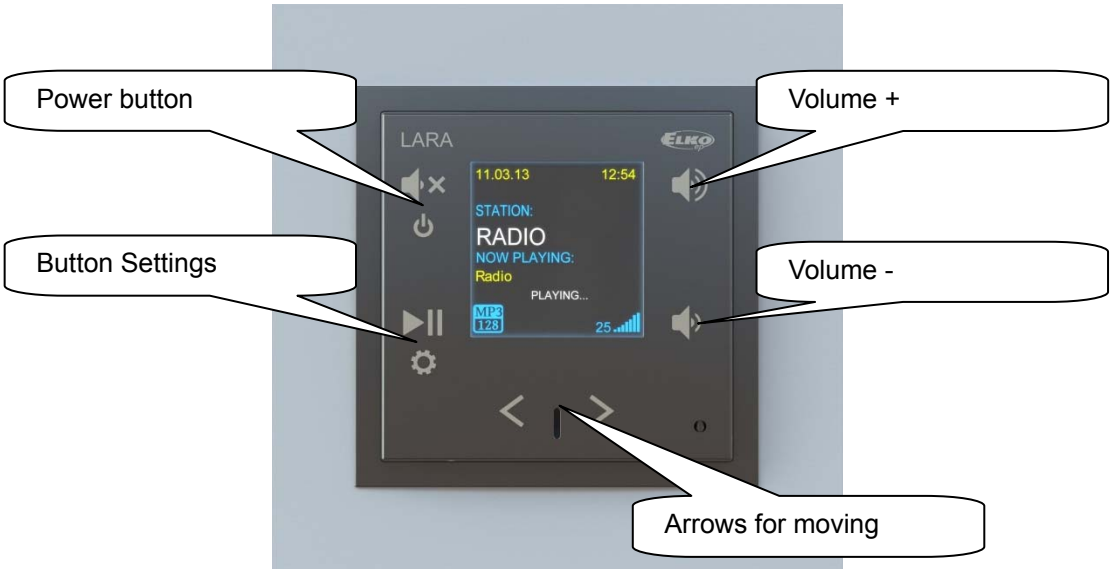
a) Install server for Squeezebox from: http://www.mysqueezebox.com/download/

b) Type the below address in the web browser on iMM Server: http://localhost:9000.

c) Click on “Next” to choose the path to music files **/home/imm/Music**>.

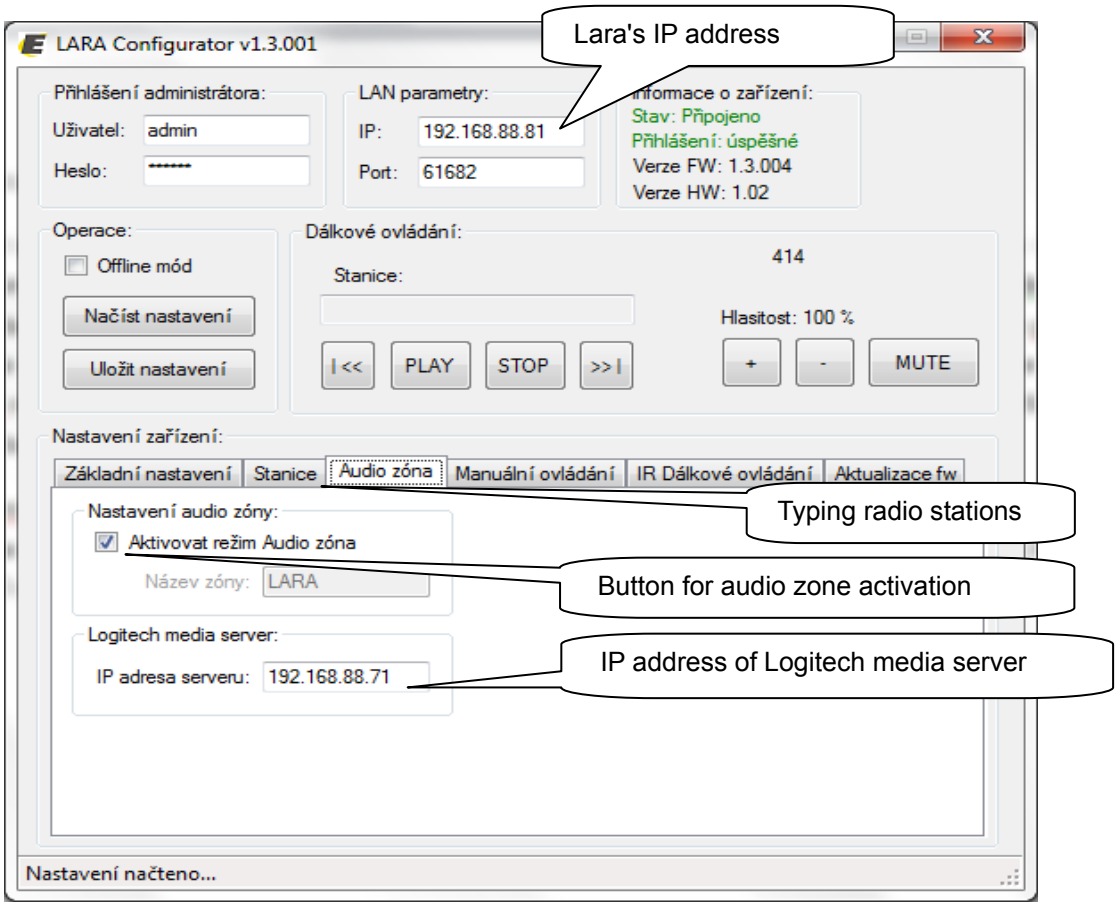
d) Click on “Next” to choose the path to the playlist **/home/imm/Music**> Finish >Close browser.

6.1 Setting AZ-LARA



Setting IP address: Hold the Setting button on the LARA panel go with the right arrow to Settings confirm bookmark LAN confirm and there, by means of volume buttons select a line you wish to set. Press the Settings button to enter adjustment in line and return by pressing the Power button. The value of the figure in the line can also be changed by the volume buttons. Once all data are set press the power button; Lara asks whether you want to save the settings; go to YES with the right arrow and confirm by the Settings button. LARA reboots.

In LARA configurator, after typing the IP address and pressing the „uploading the settings“ button tick the „Activate audiozone mode“ option in the Audio zone bookmark, and set the IP address of Logitech media server where the server for audio zones runs. Then select the option „Save settings“.



6.2 Setting iMM Audio Zone-R

iMM Audio Zone-R
Audio zone can be connected to network by means of Ethernet.

All settings of the player are done on the audio zone web interface where you can get by using the default address: “192.168.1.220“ . For the first configuration you need to set the same sub-network range, e.g.: „192.168.1.20“

Connection: Connect the supply to iMM audio zone; wait for about 20 seconds (before the system starts) and connect to PC via Ethernet cable.

Select the following after typing default address on web interface:

a) name of audio zone

b) IP address of Logitech media server

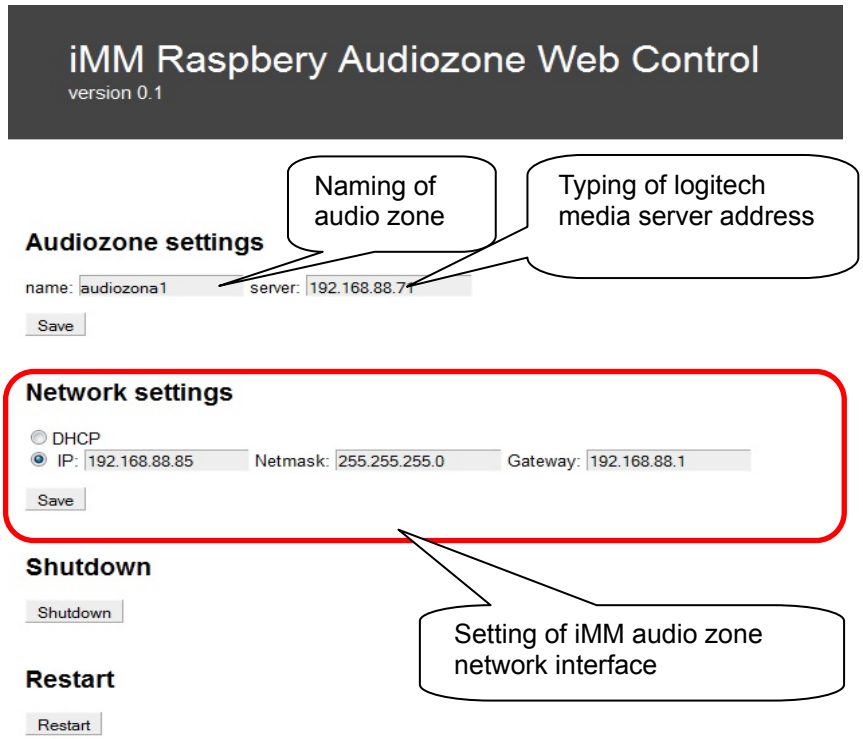
c) IP address of audio zone, mask and gateway

Once you set all necessary save it by pressing “save”.

Then set PC to the same sub-network range – by the type of IP audio zone that you selected, and reconnect to the web interface of the audio zone; then press the Shutdown button. (button for shutting it down)

Now you can connect the audio zone to local network, connect active speaker or amplifier using 3.5 mm jack and connect to power supply. After a while, the audio zone should appear on the Logitech media server. You will add it in iMM application same as other audio zones (Squeezebox,Lara).

Note: If you are not sure with the previous or existing IP address, USB keyboard has to be connected to audio zone, connect to Ethernet network and monitor, or via TV through HDMI cable and connect the power supply; after start-up (approx. 60 seconds) press the Enter key. Then log in by typing “root“ login and password “imm123”. Once you log in, type “ifconfig“ and confirm by Enter. You will find the current IP address in the second line behind the „inet“ inscription. Now type “shutdown –h now“ - command for shut down.



6.3 Setting AZ Squeezebox Touch (AZ-SQB)

Setting IP address:

- SQB automatically assigns IP address if DHCP is enabled in the network. You can find the assigned address directly in SQB in section Settings →Advanced→ Diagnostics.
- We however recommend that a fixed address is set to ensure reliable function, e.g. In case of power failure or when “DHCP server” is cleaned. Bear in mind that the SQB IP address is typed in iMM CC – so in case of malfunction it should be found out whether SQB “did not change” the IP address. You can find this directly on AZ: Settings→ Advanced→ Diagnostics.

Fixed IP address can only be set in connection to network where DHCP server is switched off (some service switch where DHCP can be turned off should be used for setting).

- After unsuccessful assignment of IP address from DHCP SQB offers manual configuration – of IP address, gateway and DNS.
- In SQB menu go to "Settings>Advanced>Connection to network>Select network>Connect in ethernet network". Now the device attempts to get IP address from DHCP; when finishes, it report error "DHCP address not found". Select "Enter IP information manually>Continue"; type in IP address, network submask, gateway and DNS. Confirm the entered data by pressing „Completed".

6.4 Directing to iMM server

Menu – **Settings>Advanced>Connection to network>Remote libraries**" – there type in the IP address of iMM Server**>**Completed.

Now you can select files to be played from AZ on iMM Server Music Storage.

7. Setting scenarios

By means of scenarios you can create scenes for individual events (e.g. turning off lights when film starts, etc).

In folder: etc/imm/events

There are files which start a scene at the below events:

- audioStart.py (when music is turned on)
- audioEnd.py (when music is turned off)
- tvEnd.py (when TV is turned off)
- tvStart.py (when TV is turned on)
- videoEnd.py ((when Video is turned off)
- videoStart.py (when Video is turned on)
- everyMinute.py (every minute checks the state of e.g. movement sensor)

- File contains commands from export.pub which are performed within the given scene. Format is the following: e.g. *epsnet[„sa04_rs_1_roleta_dolu"]=1* - kde „**sa04_rs_1_roleta_dolu**" corresponds with naming in IDM, i.e. export of *.PUB file to iMM.
- The number of commands in file is not limited.

Example:

Scene created when film ends:

epsnet["sa04_rs_1_zaluzie_nahoru"]=1	*- sun blinds up*
epsnet["sa04_rs_1_roleta_nahoru"]=1	*- shutter up*
epsnet["lbc02_rs_stmivana_zarivka_leva_ON"]=1	*- turn on fluorescent lamp*
epsnet["lbc02_rs_stmivana_zarivka_prava_ON"]=1	*- turn on fluorescent lamp*
epsnet["da22_rs_stmivane_osvetleni_halogeny_ON"]=1	*- halogens on*
epsnet["sa02_rs_led_osvetleni_ON"]=1	*- LED on*

8. Supplements

8.1. Modification and creation of icons for FP

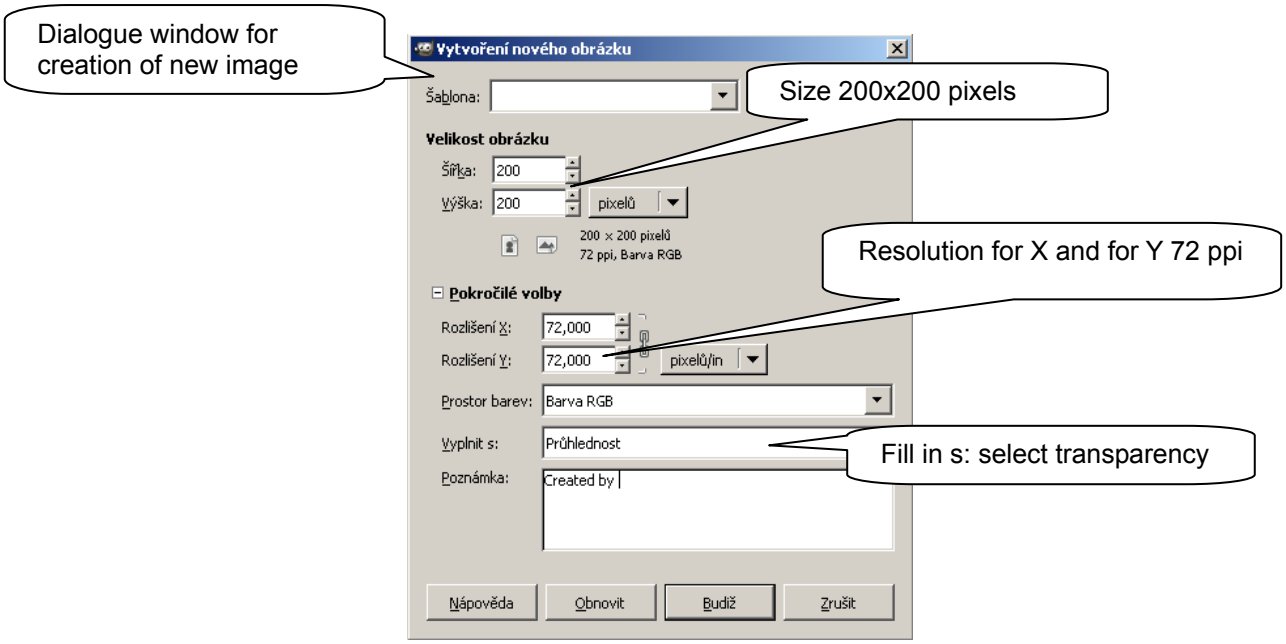
Icons on list of elements can be modified, and new added. Icons are located in directory opt/imm/gfx/inelsitems.

Icons must be saved in “PNG“ format. Application iMM supports displaying format RGBA where alpha channel is defined by 8 bites.

For creation of icons you can use e.g. an open source tool GIMP where the colour depth standard for PNG images is 24 bit, and 8 bi for alpha channel.**www.gimp.org**

Icons have 72 ppi resolution per screen, and are inserted in a 200 x 200 pixel frame.

When two-state icons are created, both these icons must be inserted in given directory whilst the second state is named _1



8.2. Screenlet

There is a screenlet bar on the main iMM application screen on the left side. Using the bar you can add screenlets on the main screen, e.g. weather, facebook, electronic gmail and others…

- If you wish to add the screenlet you desire on iMM desktop just click on its icon.
- Drag and drop to move the icon
- Setting can be done by pressing the right button.

1. Weather

Locality – type the name of town where you wish to watch the weather, e.g. Prague

Toggle – Minimizes weather just to current weather, without forecast

Size – Defines the size of the screenlet

Transparency – Defines the transparency of the screenlet

Delete – Deletes all settings and the screenelet

Close – Closes the desired screenlet; leaves the setting for its reverse call-up

2. Gmail

Properties

Update interval – Interval in which email will always be updated

Username – Your gmail user name

Password – Your gmail password

Size – Defines the size of the screenlet

Transparency – Defines the transparency of the screenlet

Delete – Deletes all settings and the screenelet

Close – Closes the desired screenlet; leaves the setting for its reverse call-up

3. **Facebook**

Properties

Update interval – Interval in which email will always be updated

Username – Your Facebook user name

Password – Your Facebook password

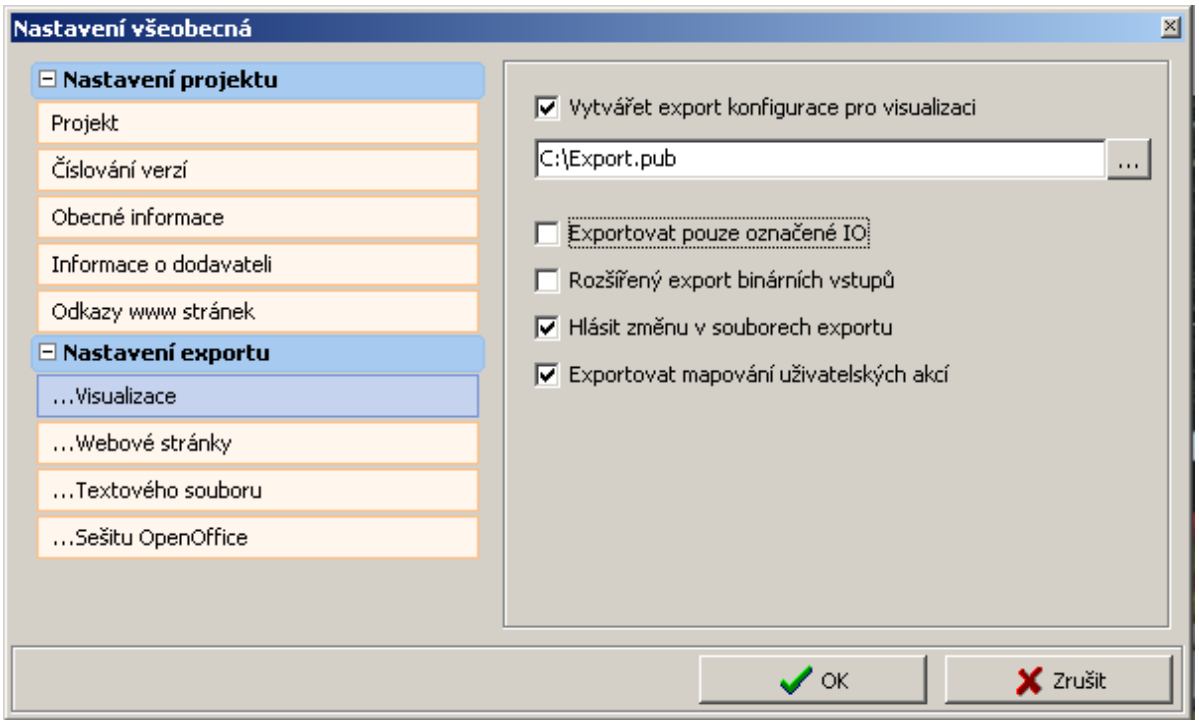
Size – Defines the size of the screenlet

Transparency – Defines the transparency of the screenlet

Delete – Deletes all settings and the screenelet

8.3. Export of configuration file to iMM

In the iNELS Design Manager (iDM) environment in the window “General Settings” select by the picture. Export will be performed when the project is saved in the central unit!



Two files Export.exp and Export.pub will be created in selected folder; the Export.pub is important for upload in iMM Control Centre.

8.4. *Supported formats*

8.4.1. *Photos: imm/Picture*

- Photos in the following formats: JPG, PNG, GIF
- Resolution: Not limited, the higher the resolution (and the larger the file), the longer the internal of uploading
- Pictures are automatically left in the original resolution.
- To display photos in FullScreen, you have to activate this function in the bottom part of the PlayList with photos by icon

8.4.2. **Music: imm/Music**

- Format: MP3, FLAC, WAV, WMA
- Resolution: up to 256 kb/s

8.4.3. **Radio: imm/Music/-Internet Radios**

- Plays internet stream of the following formats: WMA, AAC, MP3
- Suffix to file: m3u
- Name of radio: optional, e.g.: „name radio.m3u“
- Streams for CZ radios are clearly arranged on: www.play.cz
- *example:* *File name: “RockZone.m3u“*

  Content: mms://netshow5.play.cz/rockzone128
- You can find a list of already created CZ radio files after unpacking the installation package in directory imm/Radio which has to be copied to: imm/Music/-Internet Radios

8.4.4. **Film: iMM/Video**

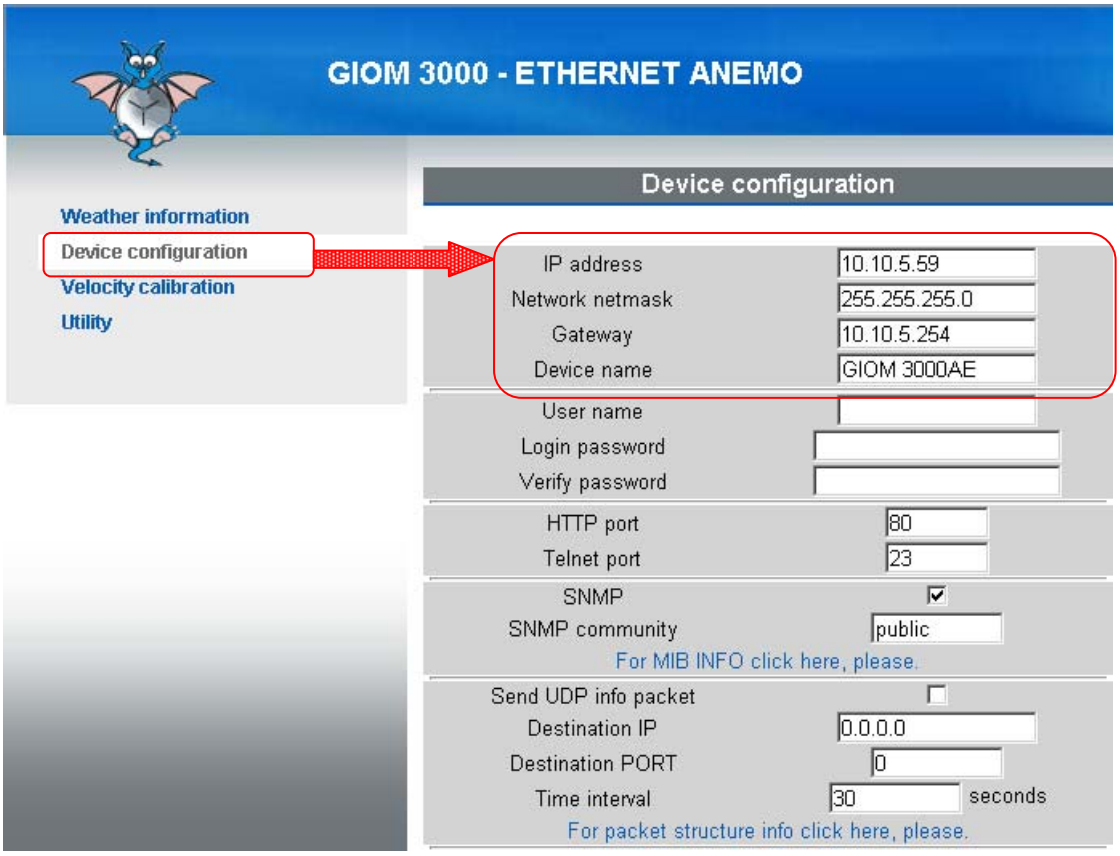
- Video in format: AVI, MPG, MP4, MKV, TS, VOB, WMV
- Subtitles: File with suffix **film_name.srt** or **film_name.sub** saved in the same folder as the movie itself. The name of the film itself, and the name of the file with subtitles must be **IDENTICAL**!
- The size of subtitles can be changed in subtitle settings ini PlayList under icon
- If subtitles do not display correctly, subtitle encoding must be changed. The UNICODE encoding is set in the default.

8.5. Third parties' devices

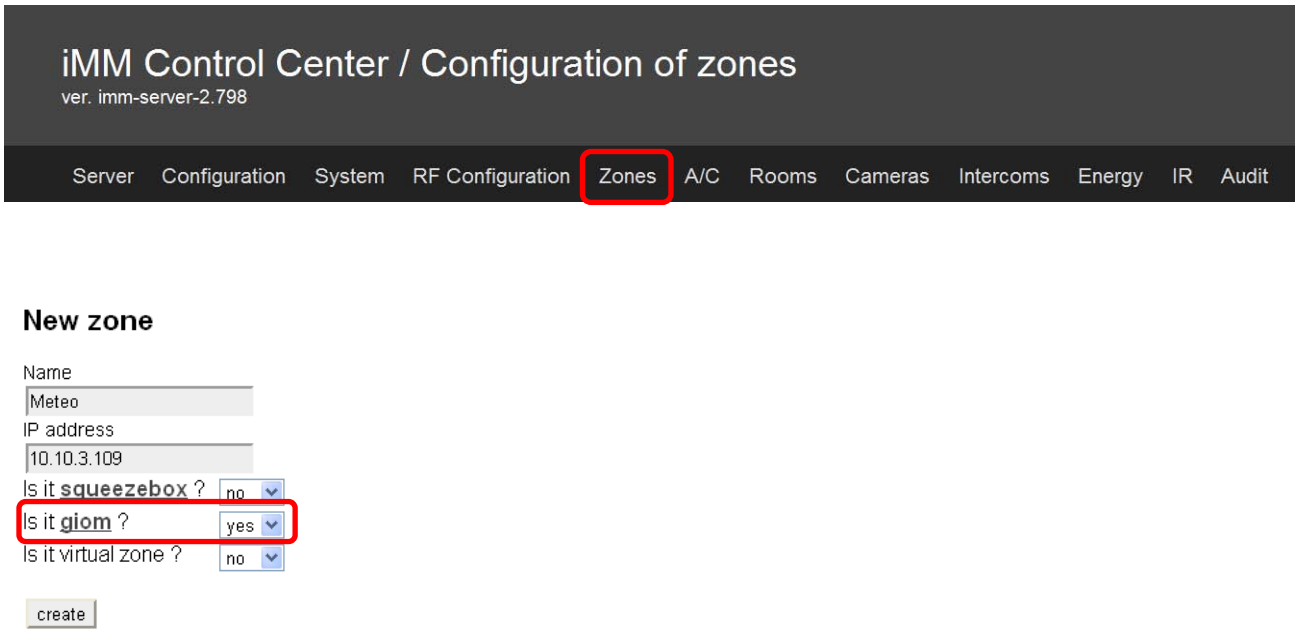
8.5.1. MeteoStation Giom

IP of Giom Meteo Station is connected via Ethernet with PoE supply. PoE (Power over Ethernet) is supply on data network cable, without the necessity of bringing the power cable to the device in another separate cable. Meteo Station can be thus connected directly to switch which supports PoE provided that the supply voltage does not exceed 30 V DC. Meteo Station can be also powered by adapter from an outlet.
To integrate Meteo Station in iMM you need to change its IP address to an address of the given range. Settings can be performed via web interface. Meteo Station IP address can be found out using the "Mlocator" software which can be downloaded in the manufacturer's website: http://www.mikrovlny.cz/cz/produkt/57

Information from meteo station can be displayed in iMM application by pressing the left button on the icon of clock in the right side of the application.



Connection to iMM server is defined in iMM Control Centre in bookmark “Zones” where the status “Is it Giom?” has to be switched from "no" status to "yes" status.



8.6 Calls between individual devices and sound

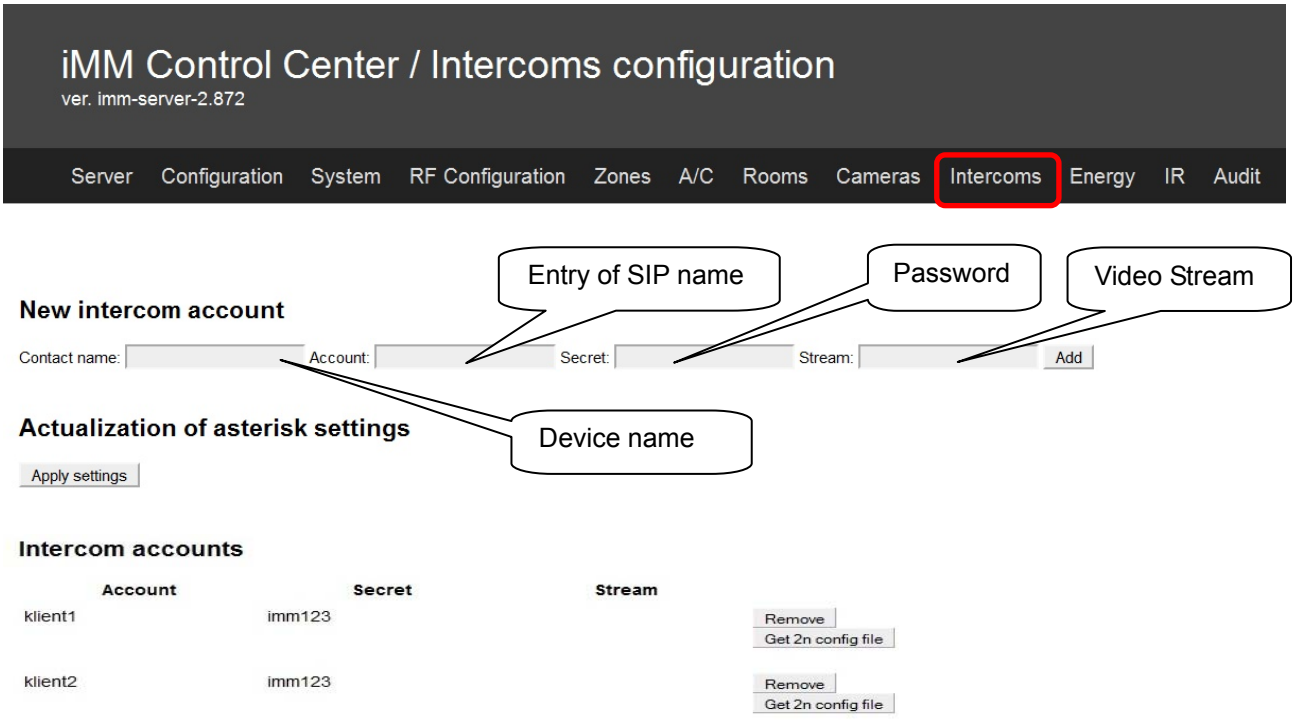
8.6.1 Server settings

On server web interface (localhost:8080) set the following in bookmark Intercoms: name, SIP name, password and videostream of device that you optionally select beforehand for the given device (sound, iMM client, phone), and add using the Add key. Copy Videostream from individual devices as long as they support it, e.g.: sounds from web interface, webcamera or any IP camera.

For instance, for 2n sound it will be stream, e.g.: “rtsp://192.168.88.83“ which consists of “„ rtsp:// „ which is a kind of stream and sound IP address.

Once you set all calling devices, save it by pressing Apply settings.

Note: After clicking the Apply settings option, configuration files of asterisk server will overwrite. If you need own asterisk configuration, do not use "Apply settings", and modify configuration files manually. Add new contacts in iMMCC by filling in the contact and clicking the Add key.

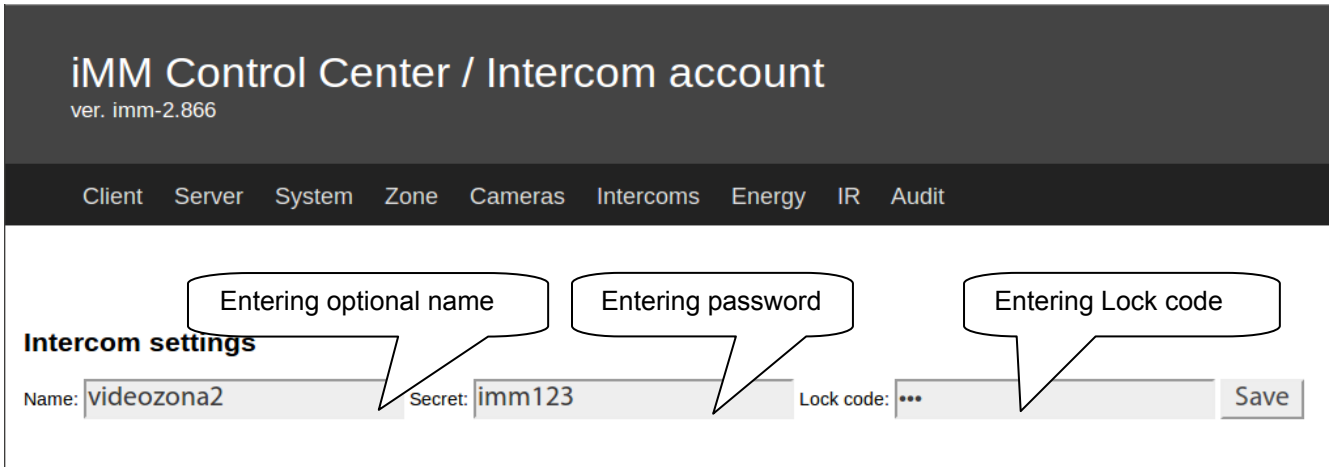


8.6.2 Client settings

On client web interface (localhost:8080) click on the Intercoms folder:

There set precise data of given station like you set them on the server.

For instance: name: klient1 Secret : imm123 Lock code: (code copied from web interface of sound-e.g. “111”); serves for opening of electronic lock.

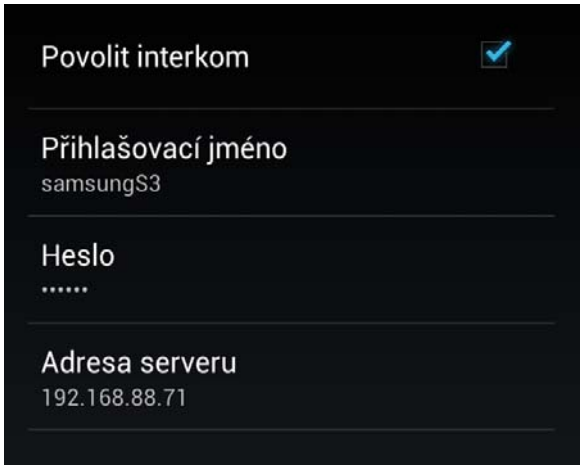


8.6.3 Phone settings

Go to applications → menu → intercom settings, and there click on "Enable intercom"

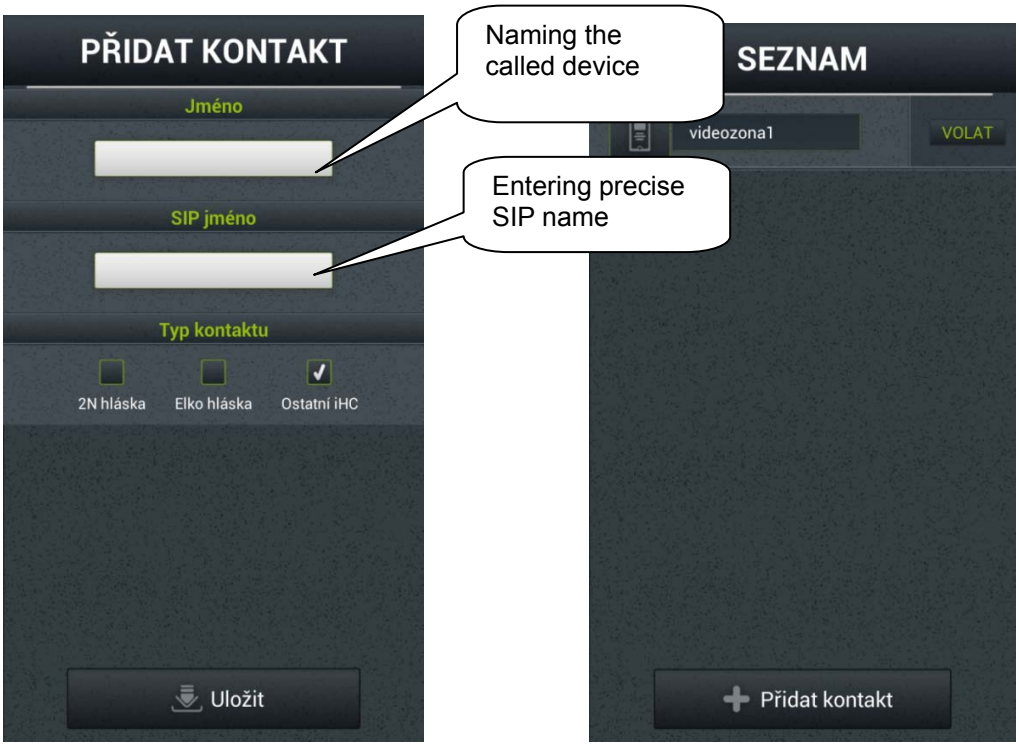
Enter the same data for the signup name as on the server web interface (e.g. samsung1)

Also the password must be identical with the one entered on the server. Finally enter the IP address of Connection Server where you completed the settings.

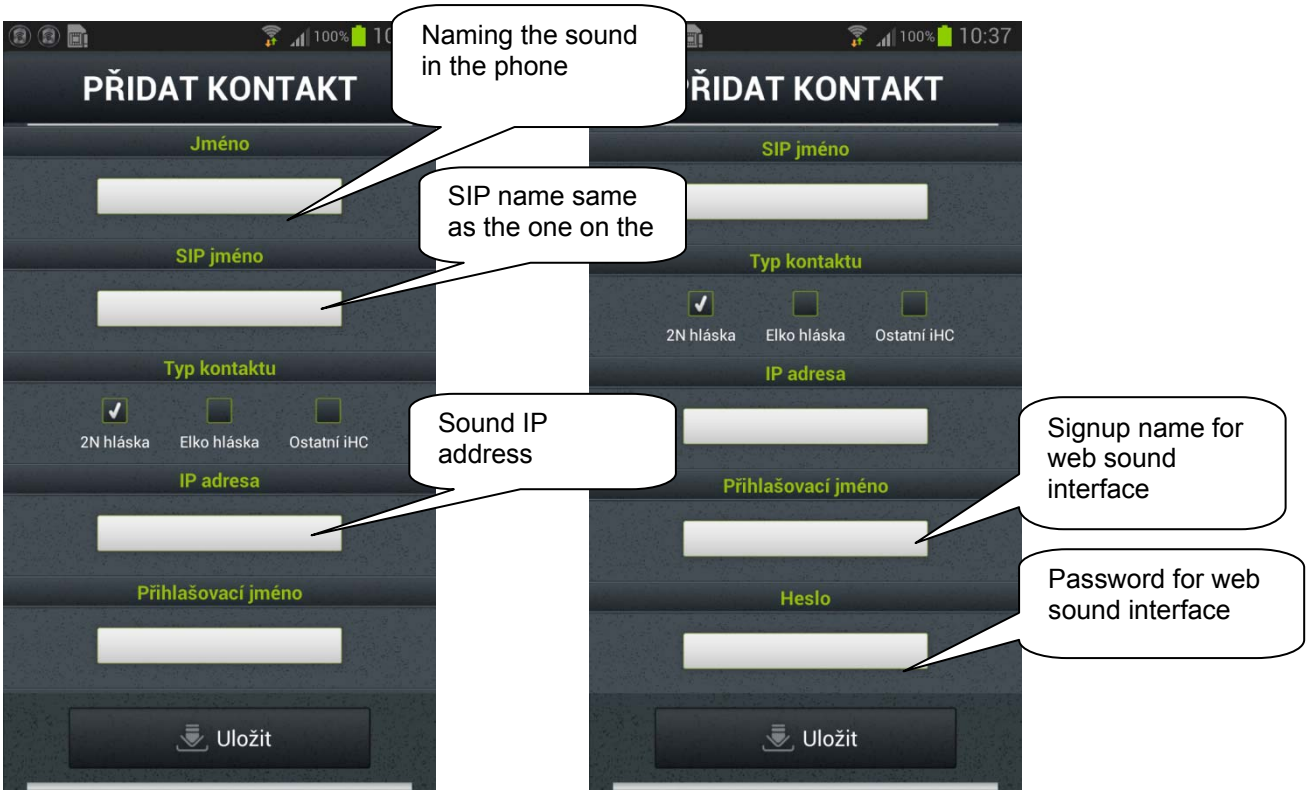


In the application click on the intercom icon and then on “Add contact“.

Name the opposite station and enter its precise SIP name (the name you entered on the server), and then select Type of contact and select “Save”.



Sound settings:



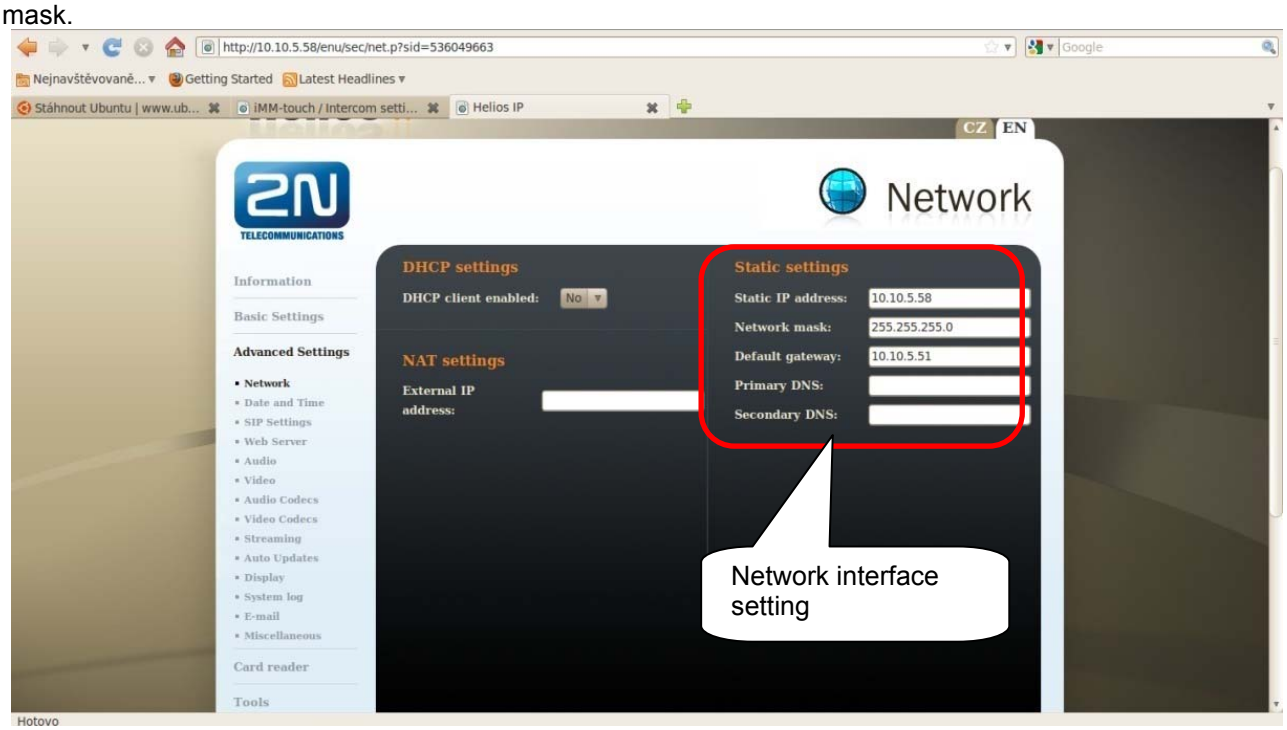
8.7 IP sound

For IP sound 2N® Helios a source DC 12V/2A should be used. See the manufacturer's user manual for more detailed information on IP sound wiring. Assignment of IP address from DHCP server is set on the new IP sound. The assigned IP address of the sound has to be ensured (in the abstract on router, alternatively by means of software 2N® Helios IP Network Scanner)

a) Sign up to discovered IP sound via web interface.

Signup name: **admin** Password: **2n**

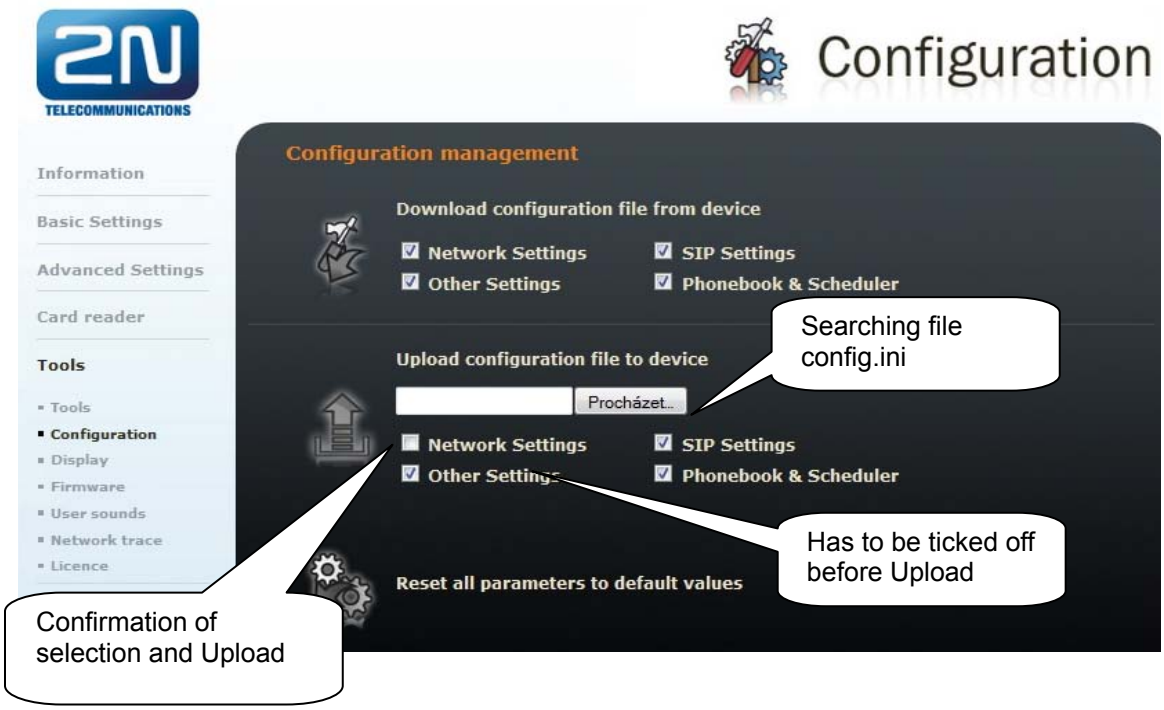
In the bookmark **AdvancedSettings -> Network** set fixed IP address from relevant range, and sub-network mask.



b) The **config.ini** file generated from server web interface of a line where the added IP sound is located, has to be uploaded to IP sound via its web interface, in the following bookmark:

Tools > Configuration > Uploadconfigurationfile to device

Before uploading config.ini to sound, the Network Settings field must be ticked off.



For successful completion of installation the device must be restarted after the installation.

8.8 Air conditioning unit CoolMaster

CoolMaster

There are 8 different versions for individual air conditioning makers

- CoolMaster Daikin 1000D
- CoolMaster Sanyo 2000S
- CoolMaster Toshiba3000T
- CoolMaster Mitsubishi Electric 4000M
- CoolMaster LG 6000L
- CoolMaster Fujitsu 7000F
- CoolMaster Mitsubishi Heavy 8000MH
- CoolMaster Hitachi 9000H

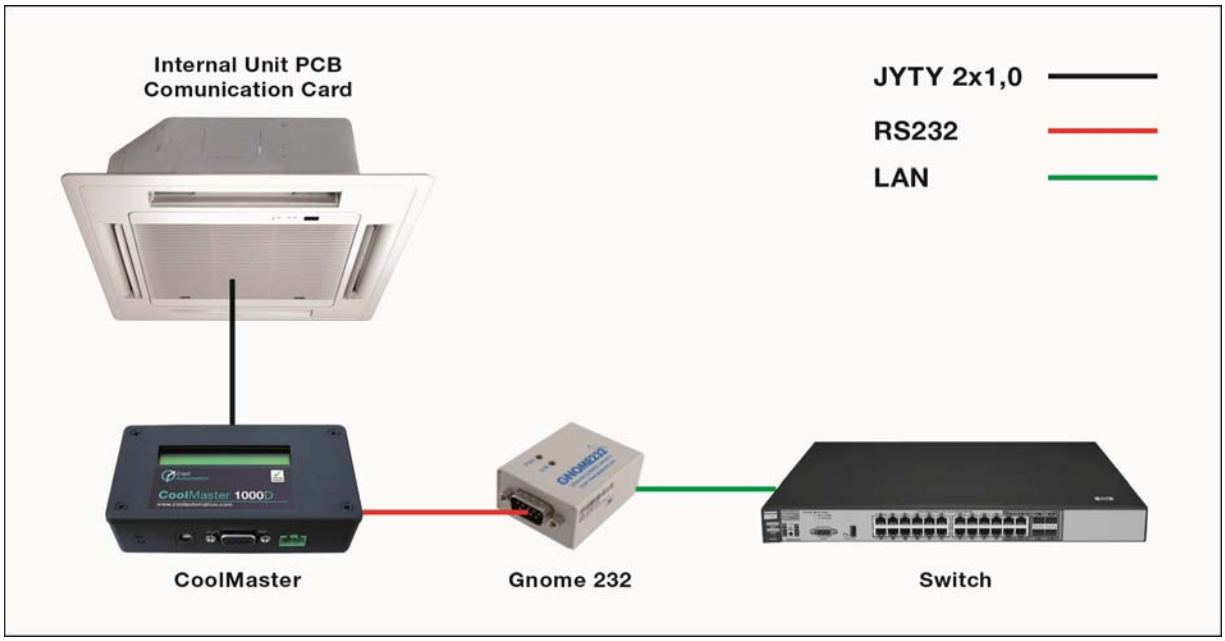
Step-by-step putting in operation

1. Connect all by the attached wiring scheme
2. Set the RS232/ETHERNET converter
3. Set the central address on the wall air conditioning unit control
4. iMM communicates via converter Papouch GNOME RS232 and its IP address has to be entered in file /etc/imm/coolMaster.cfg together with the type of the CoolMaster control unit.

If everything is set correcty, the CoolMaster display will not show U00 G00 but the typed address. For instance, U00 G01. Then everything goes via iMM client but the air conditioning unit can still be controlled via local control; they mutually synchronize.

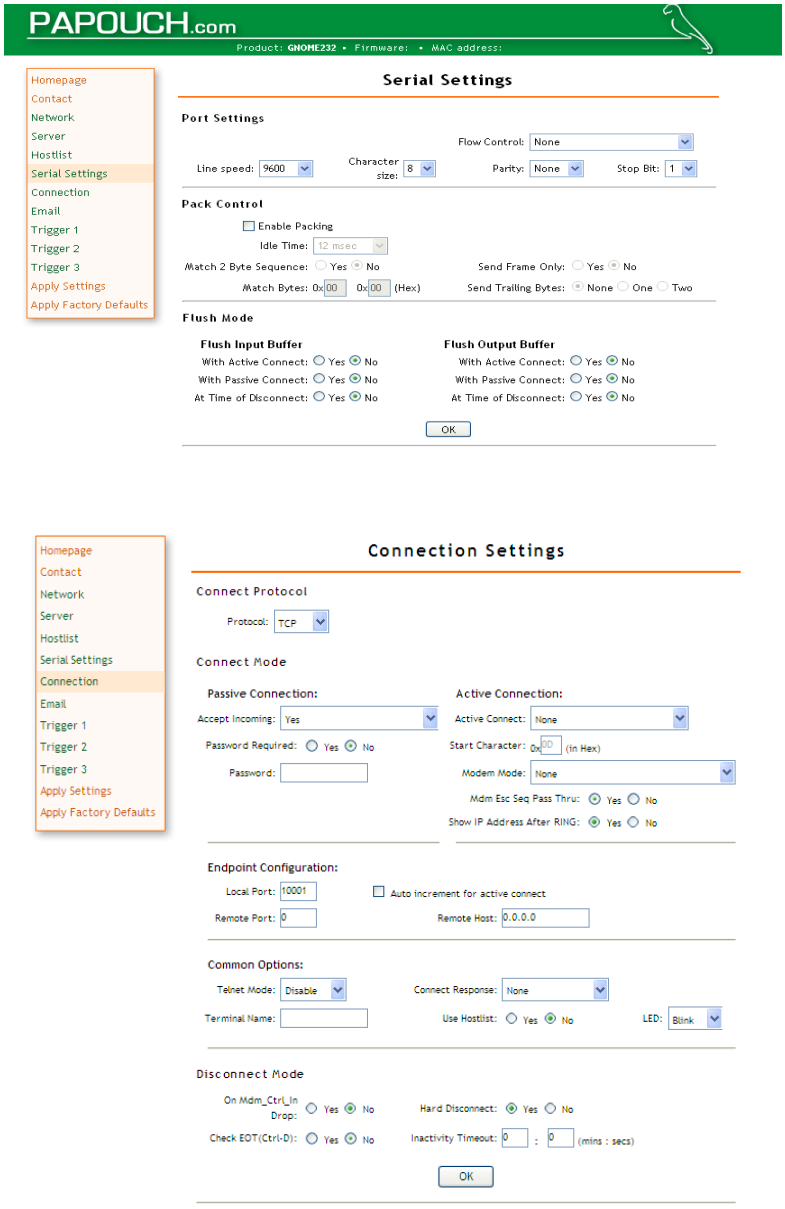
Illustrative putting in operation:

Wiring scheme



Connectors on unit

Setting the RS232/ETH converter



How to set Daikin central address

Press and hold down for 5 seconds the

TEST button

Setting mode 00 shows in the middle, and GROUP and the number on the left.

(GROUP should flash; if not press the on/off key; then it should flash).

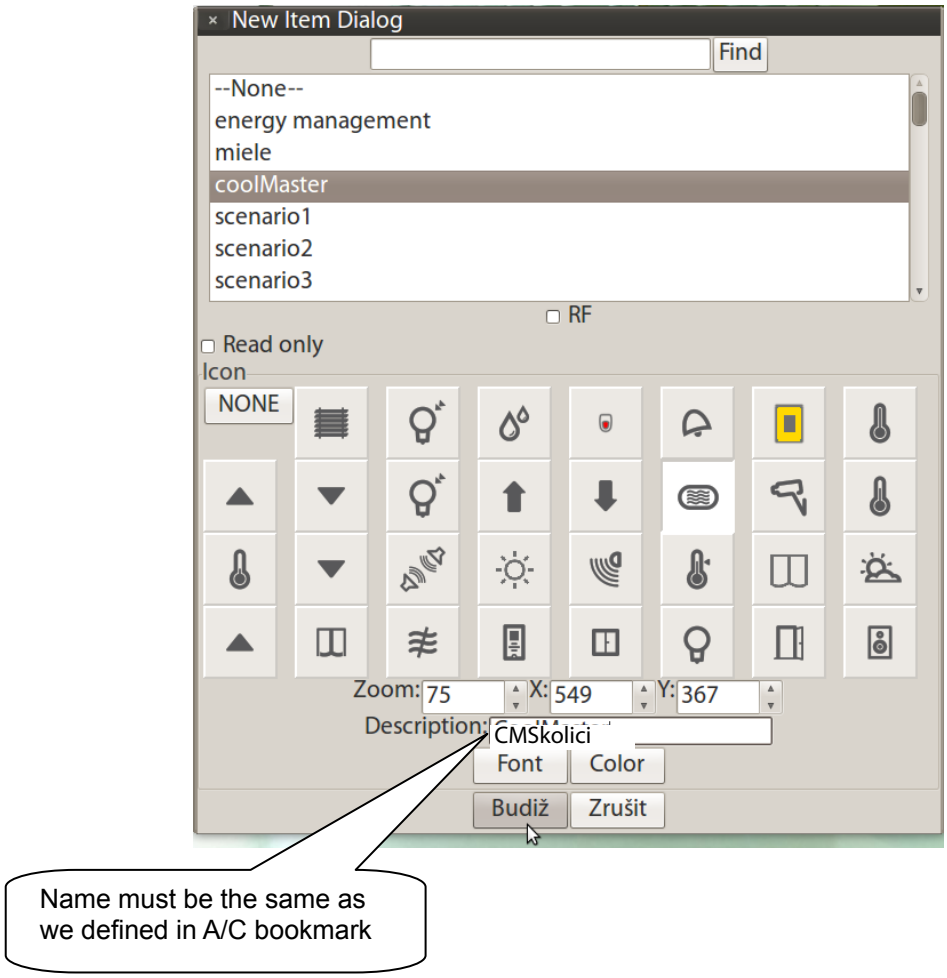
Select the desired central address using the time setting button.

Confirm by pressing the on/off button.

Complete settings by TEST button.

Setting CoolMaster in iMM; see chapter 3.1.6.

On FP the CoolMaster icon is defined in the same manner as for Miele or Enery management. When selection has to be made from extract of “coolMaster“ elements.



8.9 Connection of air conditioning units

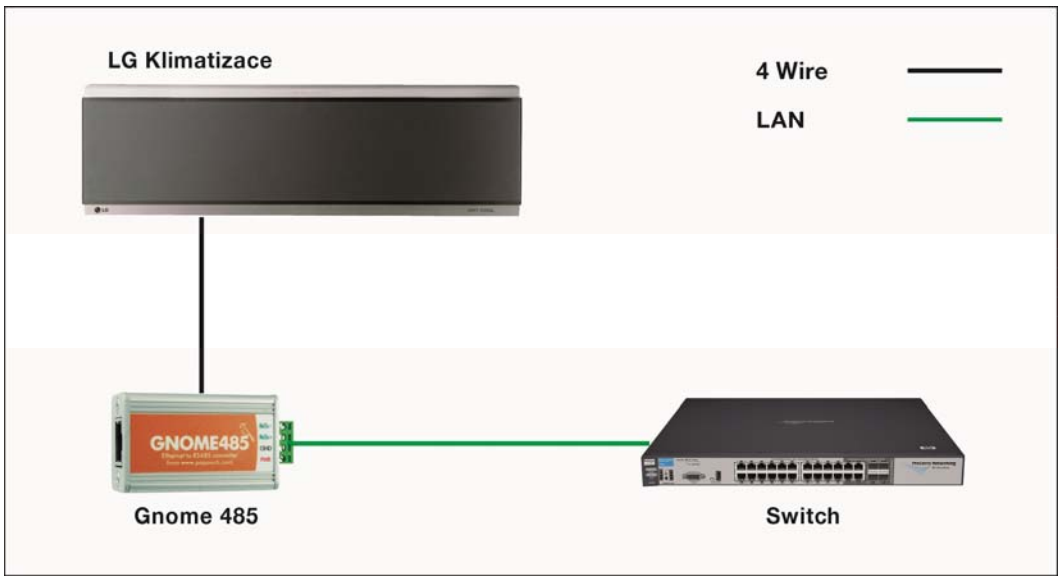
Connection of air conditioning units

There are two ways of connecting air conditioning units in iMM system:

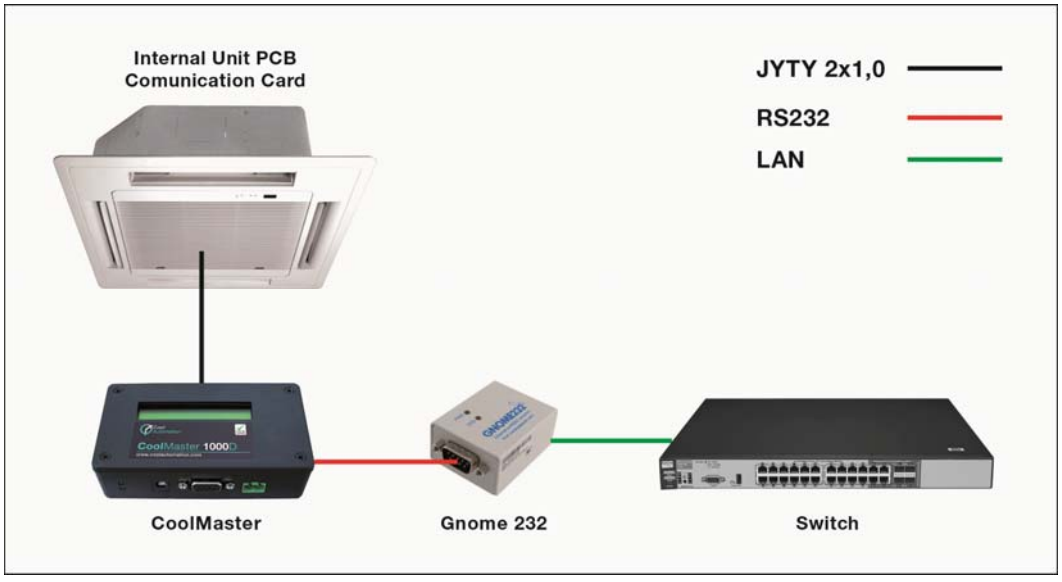
a) Direct

b) Indirect

a) Direct connection means that the air conditioning unit control protocol is implemented directly in iMM. Currently air conditioning units of LG brand are supported; others have been worked on. We support communication of LG air conditioning units which is marked as PI485. Any LG unit supports that interface; it can be interconnected to application iHC via iMM.



b) Indirect connection means utilization of communication unit CoolMaster which can communicate with different types and makers of air conditioning units (**http://www.inels.cz/media/PDF-export/download/third_party_appliances.pdf**). CoolMaster is then controlled from iMM. See 8.5.4.



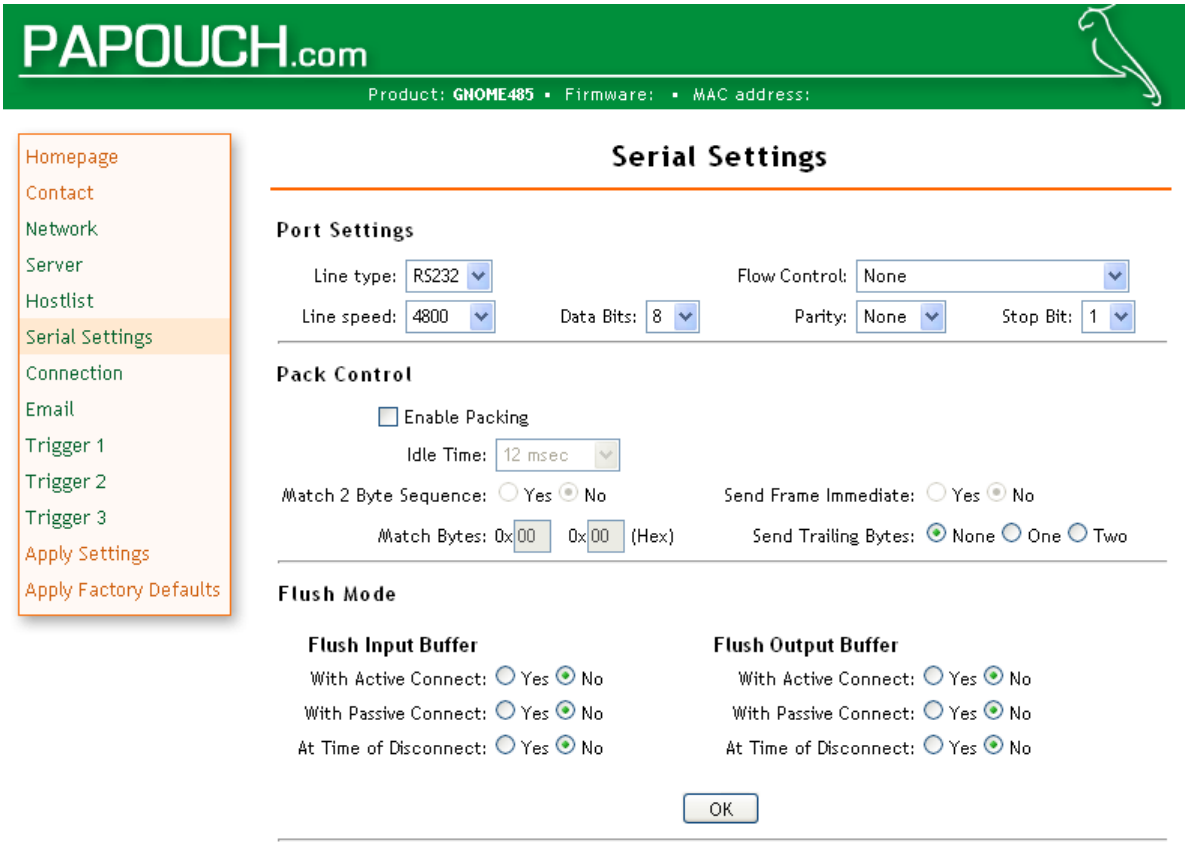
Interconnection is performed by means of 485/ETHERNET converter. Steps for communication setting:

1. Connect the converter to communication interface of air conditioning unit and to ethernet.
2. Set central address on the air conditioning unit by means of remote control (see the air conditioning unit user manual).

   Example:

   - RESET – hold down
   - MODE – hold down
   - Release RESET
   - When 00 displays, release MODE
   - Set the address inside the unit using buttons for temperature setting
   - Press ON/OFF for directing to the inner unit
   - Address displays on the unit
   - To finish the setting, reset the control
   - To check the address: RESET + PLASMA
3. Set the converter
4. Add the air conditioning unit in clims in iMM web interface (see 3.1.4.)
5. Add air conditioning units in rooms in iMM web interface (see 2.1.5.) 3.1.5.)

Setting the 485/ethernet converter – bookmark Serial Settings



Setting of converter 485/ethernet; bookmark Connection